

SERVICE MANUAL

UNI ON/OFF SERIE

INDOOR UNITS: ASCU-A, ASDU-**A, ASFU-**A**
OUTDOOR UNITS: ASGE-A**



PRODUCT

PRODUCT

1 MODELS LIST

1.1 Outdoor Unit






Model	Ref.	Power Supply	Appearance
ASGE-09A	R410a	220-240 ,1,50	
ASGE-12A	R410a	220-240 ,1,50	
ASGE-18A	R410a	220-240 ,1,50	
ASGE-24A	R410a	220-240 ,1,50	
ASGE-36A	R410a	220-240 ,1,50	
ASGE-36A	R410a	380-415 ,3,50	
ASGE-42A	R410a	380-415 ,3,50	
ASGE-48A	R410a	380-415 ,3,50	
ASGE-60A	R410a	380-415 ,3,50	

Note: 1Ton = 12000Btu/h = 3.517kW

Note: Filling amount of refrigerant in the system is matched to a 7m connecting pipe

1.2 Indoor Unit





1.2.1 Duct Type

Type	Model	Nominal Capacity Cooling/Heating (Btu/h)	Ref.	Power Supply	Appearance
Duct Type	ASDU-09A	8900/9700	R410a	220-240 1Ph 50Hz	
	ASDU-12A	11900/12300			
	ASDU-18A	17000/19400			
	ASDU-24A	24000/27300			
	ASDU-36A	33400/37500			
	ASDU-42A	33400/37500			
	ASDU-48A	41000/48000			
	ASDU-60A	48000/52900			

1.2.2 Floor- Ceiling Type

Type	Model	Nominal Capacity Cooling/Heating (Btu/h)	Ref.	Power Supply	Appearance
Floor- Ceiling Type	ASFU-09A	8900/9700	R410a	220-240 1Ph 50Hz	
	ASFU-12A	11900/12300			
	ASFU-18A	17000/19400			
	ASFU-24A	24000/27300			
	ASFU-36A	33400/37500			
	ASFU-42A	33400/37500			
	ASFU-48A	41000/48000			

1.2.3 Cassette Type

Type	Model	Nominal Capacity Cooling/Heating (Btu/h)	Ref.	Power Supply	Appearance
Cassette Type	ASCU-18A	17000/19400	R410a	220-240 1Ph 50Hz	
	ASCU-36A	33400/37500			
	ASCU-12A	11900/12300			
	ASCU-24A	24000/27300			
	ASCU-42A	33400/37500			
	ASCU-48A	41000/48000			

Note: 1 Ton = 12000Btu/h = 3.517kW

2 NOMENCLATURE

A S C U - 09 A WK
 1 2 3 4 5 6 7

NO.	Description	Options
1	Airconditioner	
2	Sinclair	
3	Product Type	D=Duct Type C=Cassette Type F= Floor & Ceiling Type G=Outdoor unit H=Wall mounted Type
4	Series Type	U=Uni On/Off Series E=External unit
5	Nominal Cooling Capacity	Nominal Cooling Capacity =Number×1000Btu/h
6	Refrigerant	A=R410A

7 Assembly winterkit

3 FUNCTION

Function	Description
Memory function	when unit restart after power off, it will run on former status, the mode and parameter are kept the same
Remote control function	wireless controller and remote controller can be opted, and the maximum control distance of remote controller is 10m.
Timing function	it can timing ON/ OFF separately, meanwhile, it can also can timing on circularly
Self-diagnosis with alarm function	once unit has malfunction, the malfunction code will be indicated and alarm ring immediately
Sleep function	it can self control for saving energy in energy saving mode.
Automatic function	the fan of indoor unit can adjust fan speed automatically based on actual demand when cooling or heating under automatic mode
Cool air proof function	the fan starts only when the temperature of indoor unit heat exchanger is higher than indoor temperature under heating mode
Weekly Timer	Centralized Control and Week Timer Functions: The centralized controller and the weekly timer are integrated in the same wire controller. The system has both the centralized control and the week timing functions. Up to 16 sets of units can be controlled simultaneously by the centralized controller (weekly timer). The weekly timer has the function of invalidating the lower unit. The weekly timing function is able to realized four timing ON/OFF periods for any unit every day, so as to achieve fully automatic operation. No timing control can be set for holidays.
High/low pressure protection	when suction pressure is too low or discharge pressure is too high, compressor will stop and unit display malfunction code
Overload protection	compressor has its own overheat protection, once the temperature of compressor is higher than allowable level, compressor will stop and only when temperature recovery, compressor restart
Over current protection	once the current of compressor is higher that normal level, compressor will stop and unit display malfunction code
Discharge high temperature protection	once the discharge temperature of compressor is higher than allowable value, compressor will stop and unit display malfunction code
Reverse (open) phase protection	once the phase sequence of power supply is incongruent or the phase is absent, unit can't work and display malfunction code
Anti-high temperature protection	once the heat exchanger temperature of indoor unit is too high, compressor stop.
Timing ON/OFF display	display and timing turn ON/OFF time (only with wired controller have this function)
Fan speed display	display the speed (high, medium, low) of fan (only with wired controller have this function)
Function model display	cooling mode, dehumidifying mode, heating mode, fan mode (only with wired controller have this function)
Testing display	display testing mode (only with wired controller have this function)
Temperature display	display room temperature and set temperature (with wired controller or remoter board have this function)

4 PRODUCT DATA

4.1 Product Data at Rated Condition

4.1.1 Duct Type

Model	Indoor unit		ASDU-09A	ASDU-12A	ASDU-18A
	Outdoor unit		ASGE-09A WK	ASGE-12A WK	ASGE-18A WK
Nominal Capacity	Cooling	kW	2.6	3.5	5.0
		Btu/h	8900	11900	17000
	Heating	kW	2.85	3.6	5.7
		Btu/h	9700	12300	19400
Power Input	Cooling	kW	1.0	1.2	2.1
	Heating	kW	0.97	1.1	1.8
EER/COP		W/W	2.60/2.94	2.92/3.27	2.38/3.17
Indoor Unit			ASDU-09A	ASDU-12A	ASDU-18A
Power Supply		—	220-240V~/1 Ph/50HZ		
Heat Exchange		—	Cross Fin Coil		
Fan	Type	—	Centrifugal fan		
	Drive	—	Direct Driver		
	Motor Output	kW	0.03	0.04	0.06
	Air Flow	m ³ /h	550/470/400	600/540/490	840/750/680
	Ext. Static Pressure	Pa	25	25	25
Sound Pressure Level (H/M/L)		dB(A)	37/36/34	40/38/36	42/40/38
Air Filter		—	Standard washable synthetic		
Drain Piping		mm	φ20×1.2	φ20×1.2	φ30×1.5
Dimensions (W×D×H) (Outline/Package)		mm	913×680×220 995×750×273	913×680×220/ 995×750×273	1012×736×266 1120×795×323
Weight (Net/Gross)		kg	24/29	25/30	34/41
Outdoor Unit			ASGE-09A WK	ASGE-12A WK	ASGE-18A WK
Power Supply		—	220-240V~/1Ph/50HZ		
Heat Exchange		—	Cross Fin Coil		
Fan	Type	—	Axial fan		
	Motor Output	kW	0.03	0.048	0.03
	Fan Motor Speed	rpm	900		
Compressor	Type	—	ROTARY		
	Motor Output	kW	0.922	1.185	1.9
Refrigerant	Type	—	R410A		
	Control	—	Capillary Tube		
	Charge	kg	1.1	1.0	1.5
Dimensions (W×D×H) (Outline/Package)		mm	820×320×540/ 870×360×590	820×320×540/ 870×360×590	820×320×540/ 870×360×590
Weight (Net/Gross)		kg	32/37	32/37	40/45
Piping Connections	Liquid	mm	6.35	6.35	6.35
	Gas	mm	9.52	12.7	12.7
	Max. Length	m	20	20	20
	Max. Height Difference	m	15	15	15

Continued

Model	Indoor unit		ASDU-24A
	Outdoor unit		ASGE-24A WK
Nominal Capacity	Cooling	kW	7.0
		Btu/h	24000
	Heating	kW	8.0
		Btu/h	27300
Power Input	Cooling	kW	2.66
	Heating	kW	2.51
EER/COP		W/W	2.63/3.19
Indoor Unit			ASDU-24A
Power Supply		—	220-240V~/1 Ph/50HZ
Heat Exchange		—	Cross Fin Coil
Fan	Type	—	Centrifugal fan
	Drive	—	Direct Driver
	Motor Output	kW	0.15
	Air Flow	m ³ /h	1600/1400/1200
	Ext. Static Pressure	Pa	25
Sound Pressure Level (H/M/L)		dB(A)	47/44/42
Air Filter		—	Standard washable synthetic
Drain Piping		mm	φ20×1.2
Dimensions (W×D×H) (Outline/Package)		mm	1270×530×268/ 1345×594×283
Weight (Net/Gross)		kg	37/43
Outdoor Unit			ASGE-24A WK
Power Supply		—	220-240V~/1Ph/50HZ
Heat Exchange		—	Cross Fin Coil
Fan	Type	—	Axial fan
	Motor Output	kW	0.092
	Fan Motor Speed(H/M/L)	rpm	940
Compressor	Type	—	ROTARY
	Motor Output	kW	2.475
Refrigerant	Type	—	R410A
	Control	—	Capillary Tube
	Charge	kg	2.2
Dimensions (W×D×H) (Outline/Package)		mm	1018×412×695/ 1100 ×450×755
Weight (Net/Gross)		kg	59/64
Piping Connections	Liquid	9.52	9.52
	Gas	mm	15.9
	Max. Length	m	30
	Max. Height Difference	m	15

Continued 1

Model	Indoor unit		ASDU-36A
	Outdoor unit		ASGE-36A WK
Nominal Capacity	Cooling	kW	9.8
		Btu/h	33400
	Heating	kW	11
		Btu/h	37500
Power Input	Cooling	kW	4.0
	Heating	kW	3.5
EER/COP		W/W	2.45/3.14
Indoor Unit			ASDU-36A
Power Supply		—	220-240V~/1 Ph/50HZ
Heat Exchange		—	Cross Fin Coil
Fan	Type	—	Centrifugal fan
	Drive	—	Direct Driver
	Motor Output	kW	0.5
	Air Flow	m ³ /h	2000/1900/1800
	Ext. Static Pressure	Pa	37
Sound Pressure Level (H/M/L)		dB(A)	50/48/46
Air Filter		—	Standard washable synthetic
Drain Piping		mm	φ20×1.2
Dimensions (W×D×H) (Outline/Package)		mm	1226×775×290/
			1335×834×305
Weight (Net/Gross)		kg	54/61
Outdoor Unit			ASGE-36A WK
Power Supply		—	380-415V~/3Ph/50HZ
Heat Exchange		—	Cross Fin Coil
Fan	Type	—	Axial fan
	Motor Output	kW	0.092
	Fan Motor Speed(H/M/L)	rpm	920/780
Compressor	Type	—	SCROLL
	Motor Output	kW	3.65
Refrigerant	Type	—	R410A
	Control	—	Capillary Tube
	Charge	kg	3.2
Dimensions (W×D×H) (Outline/Package)		mm	1018 ×412×840/
			1100×450×985
Weight (Net/Gross)		kg	90/100
Piping Connections	Liquid	mm	12.7
	Gas	mm	19.05
	Max. Length	m	50
	Max. Height Difference	m	30

Continued 2

Model	Indoor unit		ASDU-42A	ASDU-48A	ASDU-60A
	Outdoor unit		ASGE-42A WK	ASGE-48A WK	ASGE-60A WK
Nominal Capacity	Cooling	kW	12	14	16
		Btu/h	41000	48000	54600
	Heating	kW	14	15.5	18.5
		Btu/h	48000	52900	63100
Power Input	Cooling	kW	5.3	5.8	6.5
	Heating	kW	4.9	5.4	5.5
EER/COP		W/W	2.26/2.86	2.41/2.87	2.46/3.36
Indoor Unit			ASDU-42A	ASDU-48A	ASDU-60A
Power Supply		—	220-240V~1 Ph/50HZ		
Heat Exchange		—	Cross Fin Coil		
Fan	Type	—	Centrifugal fan		
	Drive	—	Direct Driver		
	Motor Output	kW	0.5		
	Air Flow	m ³ /h	2000/1900/1800	2300/2110/1850	2500/2070/1730
	Ext. Static Pressure	Pa	50	50	50
Sound Pressure Level (H/M/L)		dB(A)	50 / 48 /46	53/50/46	53 / 50 /48
Air Filter		—	Standard washable synthetic		
Drain Piping		mm	φ20×1.2	φ20×1.2	φ32×1.5
Dimensions (W×D×H) (Outline/Package)		mm	1226×775×290/ 1335 ×83×305	1226×775×290/ 1335×834×305	1226×815×330/ 1335×882×345
Weight (Net/Gross)		kg	54/61	57/67	66/76
Outdoor Unit			ASGE-42A WK	ASGE-48A WK	ASGE-60A WK
Power Supply		—	380-415V~3 Ph/50HZ		
Heat Exchange		—	Cross Fin Coil		
Fan	Type	—	Axial fan		
	Motor Output	kW	0.092		
	Fan Motor Speed(H/M/L)	rpm	840/620/400	738/1218/44	940
Compressor	Type	—	SCROLL		
	Motor Output	kW	4.75	4.5	5.75
Refrigerant	Type	—	R410A		
	Control	—	Capillary Tube		
	Charge	kg	3.55	3.8	5.0
Dimensions (W×D×H) (Outline/Package)		mm	1032×412×1250 /1100×450×1385	1032×412×1250 /1110×450×1385	1032×412×1250 /1110×450×1385
Weight (Net/Gross)		kg	112/123	112/123	123/134
Piping Connections	Liquid	mm	12.7	12.7	12.7
	Gas	mm	19.05	19.05	19.05
	Max. Length	m	50		
	Max. Height Difference	m	30		

Note:

- ① Nominal capacities are based on the follow conditions.

	Indoor	Outdoor
Cooling	DB: 27°C(80.6°F) WB: 19°C(66.2°F)	DB: 35°C(95°F) WB: 24°C(75.2°F)
Heating	DB: 20°C(68°F) WB: --°C(--°F)	DB: 7°C(44.6°F) WB: 6°C(42.8°F)
Piping Length	5m	

- ② The air volume is measured at the relevant standard external static pressure.
- ③ Noise is tested in the Semi anechoic Room, so it should be slightly higher in the actual operation due to environmental change.

4.1.2 Ceiling Type

Models	Indoor unit		ASFU-09A	ASFU-12A	ASFU-18A
	Outdoor unit		ASGE-09A WK	ASGE-12A WK	ASGE-18A WK
Nominal Capacity	Cooling	kW	2.6	3.5	5.0
		Btu/h	8900	11900	17000
	Heating	kW	2.85	3.6	5.7
		Btu/h	9700	12300	19400
Power Input	Cooling	kW	1	1.17	2.03
	Heating	kW	1	1.1	2.07
EER/ COP		W/W	2.60/2.85	2.99/3.27	2.46/2.75
Indoor Unit			ASFU-09A	ASFU-12A	ASFU-18A
Power Supply		—	220-240V~/1 Ph/50HZ		
Heat Exchange		—	Cross Fin Coil		
Fan	Type	—	Centrifugal fan		
	Drive	—	Direct Driver		
	Motor Output	kW	0.01	0.01	0.04
	Air Flow	m ³ /h	550/470/380	550/470/380	700/640/570
Sound Pressure Level (H/M/L)		dB(A)	47/44/41	46/44/41	54/50/46
Air Filter		—	Standard washable synthetic		
Drain Piping		mm	φ28×1.5		
Dimensions (W×D×H) (Outline/Package)		mm	836×695×238/ 935×805×295	836×695×238/ 935×805×295	836×695×238/ 935×805×295
Weight (Net/Gross)		kg	25/32	26/33	26/33
Outdoor Unit			ASGE-09A WK	ASGE-12A WK	ASGE-18A WK
Power Supply		—	220-240V~/1 Ph/50HZ		
Heat Exchange		—	Cross Fin Coil		
Fan	Type	—	Axial fan		
	Motor Output	kW	0.03	0.048	0.048
	Fan Motor Speed	rpm	850	900	900
Compressor	Type	—	ROTARY		
	Motor Output	kW	0.922	1.185	1.9
Refrigerant	Type	—	R410A		
	Control	—	Capillary Tube		
	Charge	kg	1.1	1.0	1.5
Dimensions (W×D×H) (Outline/Package)		mm	820×320×540 /870×360×590	820×320×540 /870×360×590	820×320×540 /870×360×590
Weight (Net/Gross)		kg	32/37	32/37	40/45
Piping Connections	Liquid	mm	6.35	6.35	6.35
	Gas	mm	9.52	12.7	12.7
	Max. Length	m	20	20	20
	Max. Height Difference	m	15	15	15

Continued

Models	Indoor unit		ASFU-24A
	Outdoor unit		ASGE-24A WK
Nominal Capacity	Cooling	kW	7.0
		Btu/h	24000
	Heating	kW	8.0
		Btu/h	27300
Power Input	Cooling	kW	2.61
	Heating	kW	2.59
EER/ COP		W/W	2.68/3.09
Indoor Unit			ASFU-24A
Power Supply		—	220-240V~/1 Ph/50HZ
Heat Exchange		—	Cross Fin Coil
Fan	Type	—	Centrifugal fan
	Drive	—	Direct Driver
	Motor Output	kW	0.05
	Air Flow	m ³ /h	1170/1080/1000
Sound Pressure Level (H/M/L)		dB(A)	50/48/46
Air Filter		—	Standard washable synthetic
Drain Piping		mm	φ28×1.5
Dimensions (W×D×H) (Outline/Package)		mm	1300×600×188 /1414×724×248
Weight (Net/Gross)		kg	33/40
Outdoor Unit			ASGE-24A WK
Power Supply		—	220-240V~/1 Ph/50HZ
Heat Exchange		—	Cross Fin Coil
Fan	Type	—	Axial fan
	Motor Output	kW	0.092
	Fan Motor Speed	rpm	940
Compressor	Type	—	ROTARY
	Motor Output	kW	2.475
Refrigerant	Type	—	R410A
	Control	—	Capillary Tube
	Charge	kg	2.2
Dimensions (W×D×H) (Outline/Package)		mm	1018×412×695/ 1100×450×755
Weight (Net/Gross)		kg	59/64
Piping Connections	Liquid	mm	9.52
	Gas	mm	15.8
	Max. Length	m	30
	Max. Height Difference	m	15

Continued 1

Models	Indoor unit		ASFU-36A
	Outdoor unit		ASGE-36A WK
Nominal Capacity	Cooling	kW	9.8
		Btu/h	33400
	Heating	kW	10.78
		Btu/h	36800
Power Input	Cooling	kW	3.6
	Heating	kW	3.3
EER/ COP		W/W	2.72/3.27
Indoor Unit			ASFU-36A
Power Supply		—	220-240V~/1Ph/50HZ
Heat Exchange		—	Cross Fin Coil
Fan	Type	—	Centrifugal fan
	Drive	—	Direct Driver
	Motor Output	kW	0.085
	Air Flow	m ³ /h	1800/1630/1520
Sound Pressure Level (H/M/L)		dB(A)	54/51/48
Air Filter		—	Standard washable synthetic
Drain Piping		mm	φ28×1.5
Dimensions (W×D×H) (Outline/Package)		mm	1590×695×238/ 1714×830×330
Weight (Net/Gross)		kg	48/58
Outdoor Unit			ASGE-36A WK
Power Supply		—	380-415V~/3Ph/50 HZ
Heat Exchange		—	Cross Fin Coil
Fan	Type	—	Axial fan
	Motor Output	kW	0.092
	Fan	rpm	900
Compressor	Type	—	SCROLL
	Motor Output	kW	3.65
Refrigerant	Type	—	R410A
	Control	—	Capillary Tube
	Charge	kg	3.2
Dimensions (W×H×D) (Outline/Package)		mm	1018×412×840/ 1100×450×985
Weight (Net/Gross)		kg	90/100
Piping Connections	Liquid	mm	12.7
	Gas	mm	19.05
	Max. Length	m	50
	Max. Height	m	30

Continued 2

Models	Indoor unit		ASFU-42A	ASFU-48A
	Outdoor unit		ASGE-42A WK	ASGE-48A WK
Nominal Capacity	Cooling	kW	12	14
		Btu/h	41000	48000
	Heating	kW	14	15.5
		Btu/h	48000	52900
Power Input	Cooling	kW	4.8	6.1
	Heating	kW	4.7	5.8
EER/ COP		W/W	2.50/2.98	2.30/2.67
Indoor Unit			ASFU-42A	ASFU-48A
Power Supply		—	220-240V~/1Ph/50HZ	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	Centrifugal fan	
	Drive	—	Direct Driver	
	Motor Output	kW	0.085	0.085
	Air Flow	m ³ /h	1800/1630/1520	2100/1900/1800
Sound Pressure Level (H/M/L)		dB(A)	54/51/48	58/55/52
Air Filter		—	Standard washable synthetic	
Drain Piping		mm	φ28×1.5	
Dimensions (W×D×H) (Outline/Package)		mm	1590×695×238/ 1714×830×330	1590×695×238/ 1714×830×330
Weight (Net/Gross)		kg	48/58	48/58
Outdoor Unit			ASGE-42A WK	ASGE-48A WK
Power Supply		—	380-415V~/3 Ph/50HZ	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	Axial fan	
	Motor Output	kW	0.068	0.092
	Fan Motor Speed(H/M/L)	rpm	840/620/400	940
Compressor	Type	—	SCROLL	
	Motor Output	kW	4.75	4.5
Refrigerant	Type	—	R410A	
	Control	—	Capillary Tube	
	Charge	kg	3.55	3.8
Dimensions (W×D×H) (Outline/Package)		mm	1032×412×1250/ 11105× 450 ×1385	1032×412×1250/ 1110× 450×1385
Weight (Net/Gross)		kg	112/123	
Piping Connections	Liquid	mm	12.7	
	Gas	mm	19.05	
	Max. Length	m	50	
	Max. Height Difference	m	30	

Note:

- ① Nominal capacities are based on the follow conditions.

	Indoor	Outdoor
Cooling	DB: 27°C(80.6°F) WB: 19°C(66.2°F)	DB: 35°C(95°F) WB: 24°C(75.2°F)
Heating	DB: 20°C(68°F) WB: --°C(--°F)	DB: 7°C(44.6°F) WB: 6°C(42.8°F)
Piping Length	5m	

- ② The air volume is measured at the relevant standard external static pressure.
- ③ Noise is tested in the Semianechoic Room, so it should be slightly higher in the actual operation due to environmental change.

4.1.3 Cassette Type

Models	Indoor unit		ASCU-12A	ASCU-18A	ASCU-24A
	Outdoor unit		ASGE-12A WK	ASGE-18A WK	ASGE-24A WK
Nominal Capacity	Cooling	kW	3.5	5.0	6.8
		Btu/h	11900	17000	23200
	Heating	kW	3.6	5.4	7.5
		Btu/h	12300	18400	25600
Power Input	Cooling	kW	1.17	2.0	2.62
	Heating	kW	1.1	1.9	2.5
EER/COP		W/W	2.99/3.27	2.50/2.84	2.60/3.00
Indoor Unit			ASCU-12A	ASCU-18A	ASCU-24A
Power Supply		—	220-240V~/1 Ph/50HZ		
Heat Exchange		—	Cross Fin Coil		
Fan	Type	—	Centrifugal fan		
	Drive	—	Direct Driver		
	Motor Output	kW	0.011	0.011	0.035
	Air Flow	m ³ /h	550/490/420	550/490/420	1180/1080/1000
Sound Pressure Level (H/M/L)		dB(A)	47/45/43		
Air Filter		—	Standard washable synthetic		
Drain Piping		mm	φ31×3	φ31×3	φ32×3
Indoor Unit Dimensions (Outline/Package) (W×D×H)		mm	600×600×230/ 848×678×310	600×600×230/ 848×678×310	840×840×240/ 960×960×310
Panel Dimensions (Outline/Package) (W×D×H)		mm	650×650×50/ 670×730×102	650×650×50/ 670×730×102	950×950×60/ 1025×1040×115
Weight (Net/Gross)		kg	20/27	20/27	27/36
Outdoor Unit			ASGE-12A WK	ASGE-18A WK	ASGE-24A WK
Power Supply		—	220-240V~/1 Ph/50HZ		
Heat Exchange		—	Cross Fin Coil		
Fan	Type	—	Axial fan		
	Motor Output	kW	0.048	0.048	0.092
	Fan Motor Speed(H/M/L)	rpm	900	900	940
Compressor	Type	—	ROTARY		
	Motor Output	kW	1.185	1.9	2.475
Refrigerant	Type	—	R410A		
	Control	—	Capillary Tube		
	Charge	kg	1.0	1.5	2.2
Dimensions (W×D×H) (Outline/Package)		mm	820×320×540/ 870×360×590	820×320×540/ 870×360×590	1018×412×695/ 1100×450×755
Weight (Net/Gross)		kg	32/37	40/45	59/64
Piping Connections	Liquid	mm	6.35	6.35	9.52
	Gas	mm	12.7	12.7	15.8
	Max. Length	m	20	20	30
	Max. Height Difference	m	15	15	15

Note: Water pump discharge height : ASCU-12A - 500mm (from bottom edge)

ASCU-18A - 500mm (from bottom edge)

ASCU-24A - 1125mm (from bottom edge)

Continued 1

Models	Indoor unit		ASCU-36A
	Outdoor unit		ASGE-36A WK
Nominal Capacity	Cooling	kW	10
		Btu/h	34100
	Heating	kW	11
		Btu/h	37500
Power Input	Cooling	kW	3.6
	Heating	kW	3.1
EER/COP		W/W	2.78/3.55
Indoor Unit			ASCU-36A
Power Supply		—	220-240V~1 Ph/50HZ
Heat Exchange		—	Cross Fin Coil
Fan	Type	—	Centrifugal fan
	Drive	—	Direct Driver
	Motor Output	kW	0.06
	Air Flow	m ³ /h	1660/1570/1500
Sound Pressure Level (H/M/L)		dB(A)	53/51/48
Air Filter		—	Standard washable synthetic
Drain Piping		mm	φ32×3
Indoor Unit Dimensions (Outline/Package) (W×D×H)		mm	840×840×320/ 960×960×394
Panel Dimensions (Outline/Package) (W×D×H)		mm	950×950×60/ 1025×1040×115
Weight (Net/Gross)		kg	32/43
Outdoor Unit			ASGE-36A WK
Power Supply		—	380-415V~3Ph/50HZ
Heat Exchange		—	Cross Fin Coil
Fan	Type	—	Axial fan
	Motor Output	kW	0.092
	Fan Motor Speed(H/M/L)	rpm	900
Compressor	Type	—	SCROLL
	Motor Output	kW	3.65
Refrigerant	Type	—	R410A
	Control	—	Capillary Tube
	Charge	kg	3.2
Dimensions (W×D×H) (Outline/Package)		mm	1018×412×840/ 1100×450×985
Weight (Net/Gross)		kg	90/100
Piping Connections	Liquid	mm	12.7
	Gas	mm	19.05
	Max. Length	m	50
	Max. Height Difference	m	30

Note: Water pump discharge height : ASCU-36A - 1125mm (from bottom edge)

Continued 2

Models	Indoor unit		ASCU-42A	ASCU-48A
	Outdoor unit		ASGE-42A WK	ASGE-48A WK
Nominal Capacity	Cooling	kW	12	14
		Btu/h	41000	48000
	Heating	kW	14	15.5
		Btu/h	48000	52900
Power Input	Cooling	kW	4.8	5.8
	Heating	kW	5.0	6.2
EER/COP		W/W	2.50/2.80	2.41/2.50
Indoor Unit			ASCU-42A	ASCU-48A
Power Supply		—	220-240V~/1 Ph/50HZ	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	Centrifugal fan	
	Drive	—	Direct Driver	
	Motor Output	kW	0.06	
	Air Flow	m ³ /h	1660/1570/1500	1660/1570/1500
Sound Pressure Level (H/M/L)		dB(A)	53/ 51 /48	
Air Filter		—	Standard washable synthetic	
Drain Piping		mm	φ32×3	
Indoor Unit Dimensions (Outline/Package) (W×D×H)		mm	840×840×320/ 960×960×394	
Panel Dimensions (Outline/Package) (W×D×H)		mm	950×950×60/ 1025×1040×115	
Weight (Net/Gross)		kg	32/43	
Outdoor Unit			ASGE-42A WK	ASGE-48A WK
Power Supply		—	380-415V~/3 Ph/50HZ	
Heat Exchange		—	Cross Fin Coil	
Fan	Type	—	Axial fan	
	Motor Output	kW	0.068	0.092
	Fan Motor Speed(H/M/L)	rpm	840/620/400	
Compressor	Type	—	SCROLL	
	Motor Output	kW	4.75	4.5
Refrigerant	Type	—	R410A	
	Control	—	Capillary Tube	
	Charge	kg	3.55	3.8
Dimensions () (Outline/Package) (W×D×H)		mm	1032×412×1250/ 1110 ×450 × 1385	
Weight (Net/Gross)		kg	112/123	
Piping Connections	Liquid	mm	12.7	
	Gas	mm	19.05	
	Max. Length	m	50	
	Max. Height Difference	m	30	

Note: Water pump discharge height : ASCU-42A - 1125mm (from bottom edge)
ASCU-48A - 1125mm (from bottom edge)

Note:

- ① Nominal capacities are based on the follow conditions.

	Indoor	Outdoor
Cooling	DB: 27°C(80.6°F) WB: 19°C(66.2°F)	DB: 35°C(95°F) WB: 24°C(75.2°F)
Heating	DB: 20°C(68°F) WB: --°C(--°F)	DB: 7°C(44.6°F) WB: 6°C(42.8°F)
Piping Length	5m	

- ② The air volume is measured at the relevant standard external static pressure.
- ③ Noise is tested in the Semianechoic room, so it should be slightly higher in the actual operation due to environmental change.

4.2 Operation Range

Mode	Range of Outdoor Temperature°C (°F)
Cooling	18°C-43°C -7°C-43°C(with low Ambient kit)
Heating	-7°C-24°C

4.3 Electrical Data

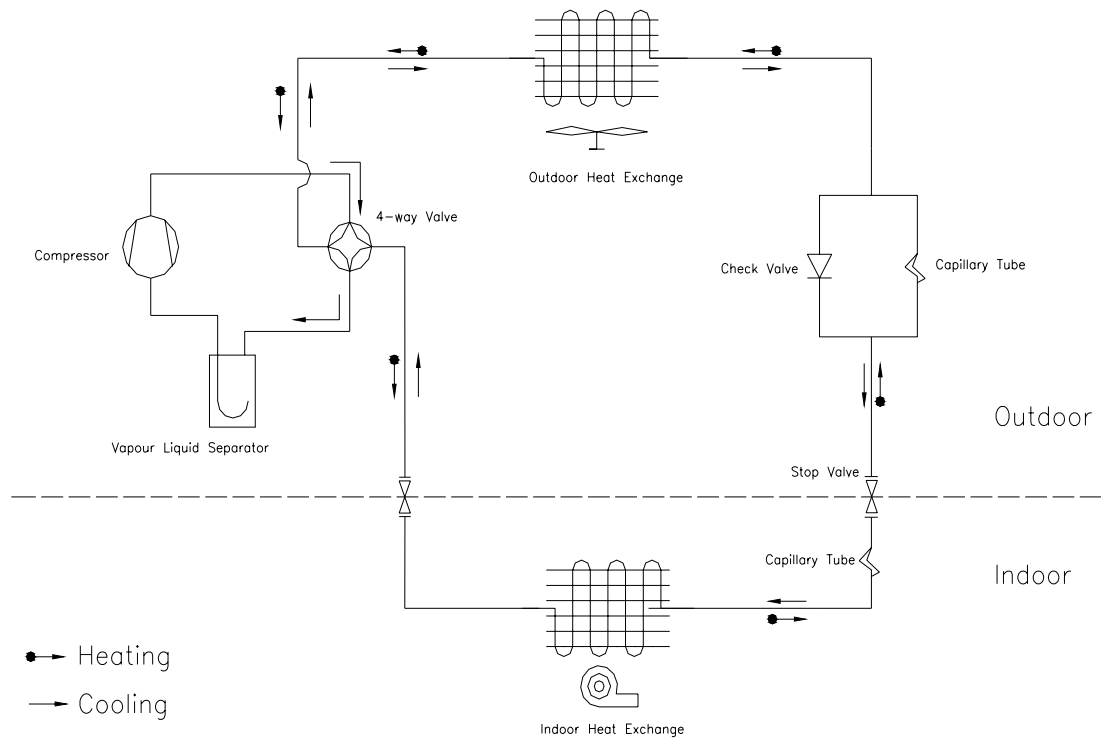
Model		Compressor				Fan Motor		Max. Fuse Breaker Size (Indoor/Outdoor)	Min. Disconnect Size (Indoor/Outdoor)
		Power Supply	Oty	LRA	RLA	Condenser Fan Motors	Supply Blower Motor		
		V,P h ,H z	-	Each	Each	FLA Each	FLA Each	Amperes	Amperes
ASGE-09A WK	ASDU-09A	220-240, 1, 50	1	18	4.28	0.27	0.18	6/16	6/16
	ASFU-09A						0.09	6/16	6/16
ASGE-12A WK	ASDU-12A		1	32	5.6	0.27	0.18	6/16	6/16
	ASFU-12A						0.09	6/16	6/16
	ASCU-12A						0.1	6/16	6/16
ASGE-18A WK	ASDU-18A		1	40	8.8	0.27	0.63	6/20	6/20
	ASFU-18A						0.36	6/20	6/20
	ASCU-18A						0.1	6/20	6/20
ASGE-24A WK	ASDU-24A		1	60	11.2	0.61	1.35	6/25	6/25
	ASFU-24A						0.9	6/25	6/25
	ASCU-24A						0.32	6/25	6/25
ASGE-36A WK	ASDU-36A	380-415, 3, 50	1	67	6.58	0.8	4.5	10/16	10/16
	ASFU-36A						1.35	6/16	6/16
	ASCU-36A						0.54	6/16	6/16
ASGE-42A WK	ASDU-42A		1	66	8.22	0.8	4.5	10/20	10/25
	ASFU-42A						1.35	6/20	6/25
	ASCU-42A						0.54	6/20	6/25
ASGE-48A WK	ASDU-48A		1	59.4	8	0.8	4.5	10/25	10/25
	ASFU-48A						1.62	6/25	6/25
	ASCU-48A						0.54	6/25	6/25
ASGE-60A WK	ASDU-60A		1	67	9.77	0.8	4.5	10/25	10/25

Notes :

RLA : Rated load amperes

LRA : Locked rotor amperes

FLA : Full load current

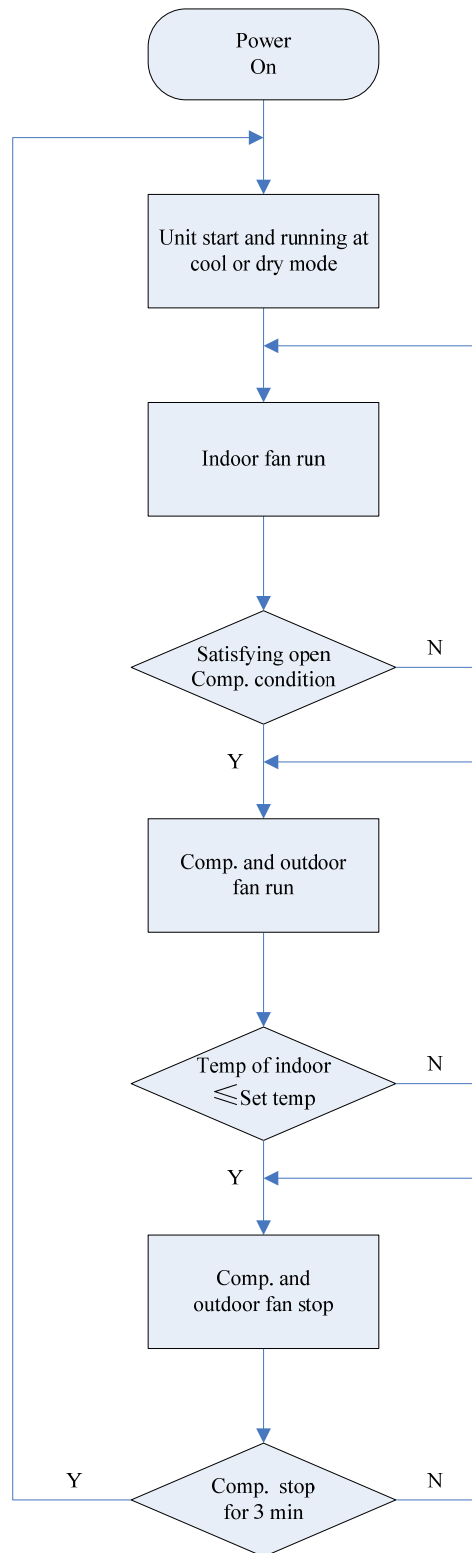
5 PIPING DIAGRAM

CONTROL

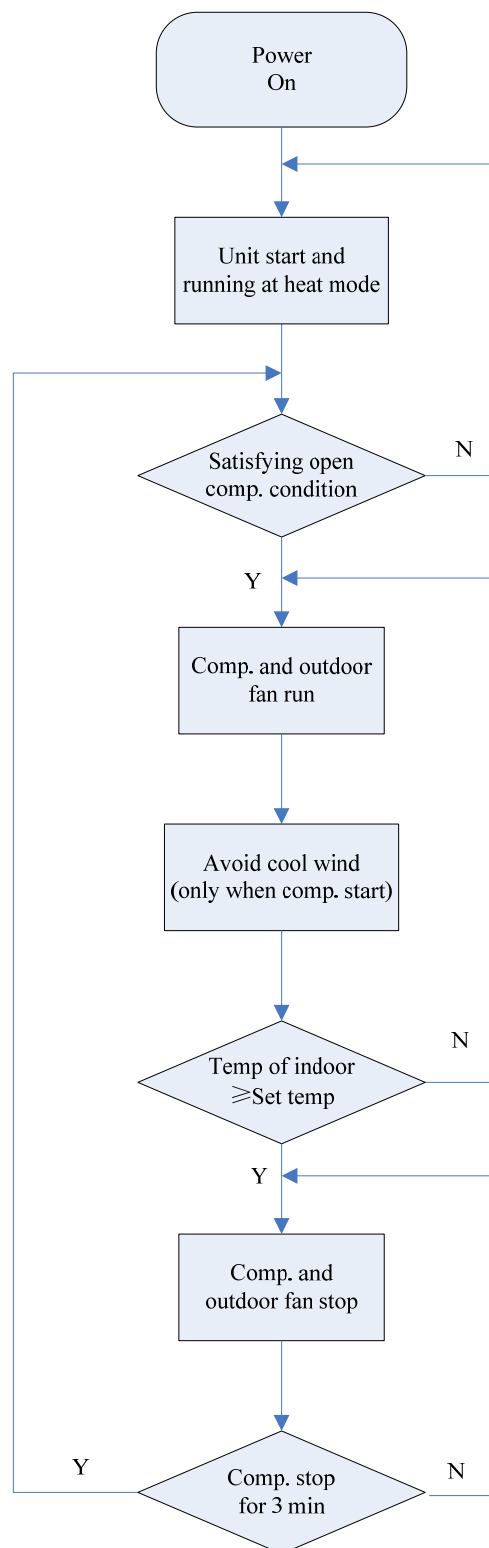
CONTROL

1 OPERATION FLOWCHART

1.1 Cooling/Dry Operation

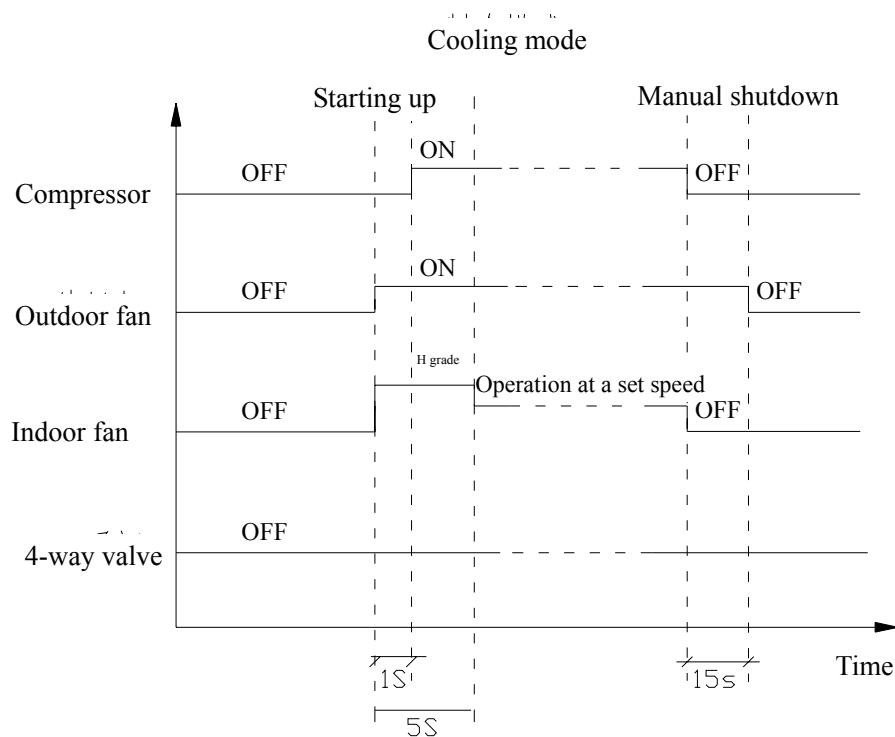


1.2 Heating Operation



2 MAIN LOGIC

2.1 Cooling

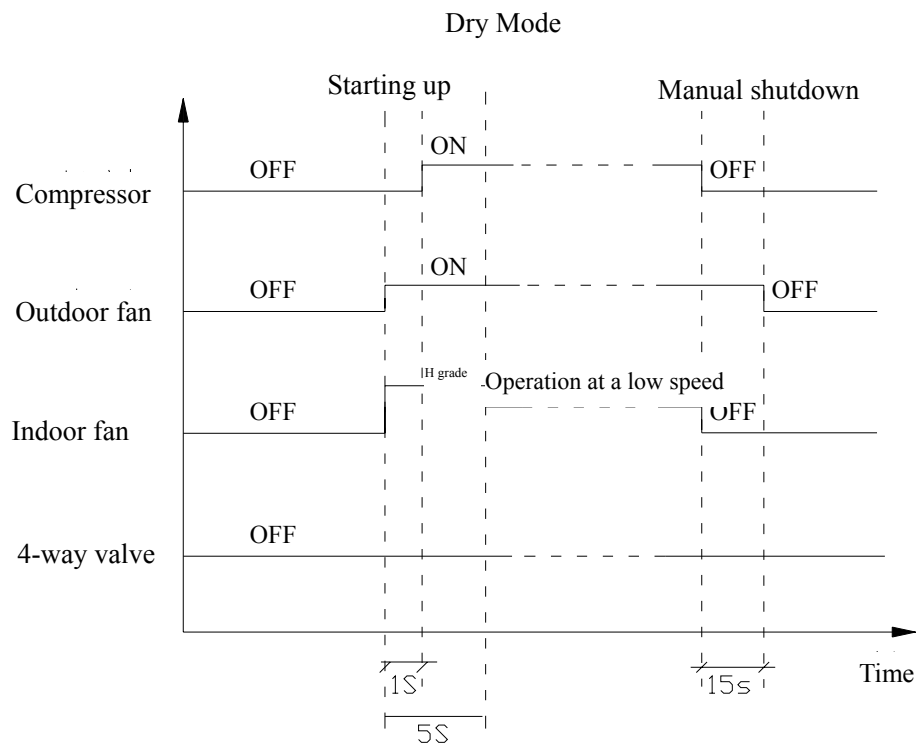


When $T_{amb} \geq T_{preset} + 1^{\circ}\text{C}$, the unit begins cooling operation and the compressor and the outdoor fan are running; and the indoor fan is running at a set speed.

When $T_{amb} \leq T_{preset} - 1^{\circ}\text{C}$, the unit is in the cooling shutdown state, and the compressor and the outdoor fan stop running; and the indoor fan is running at a set speed.

When $T_{preset} - 1^{\circ}\text{C} < T_{amb} < T_{preset} + 1^{\circ}\text{C}$, the unit keeps in the operation state.

2.2 Dry Mode

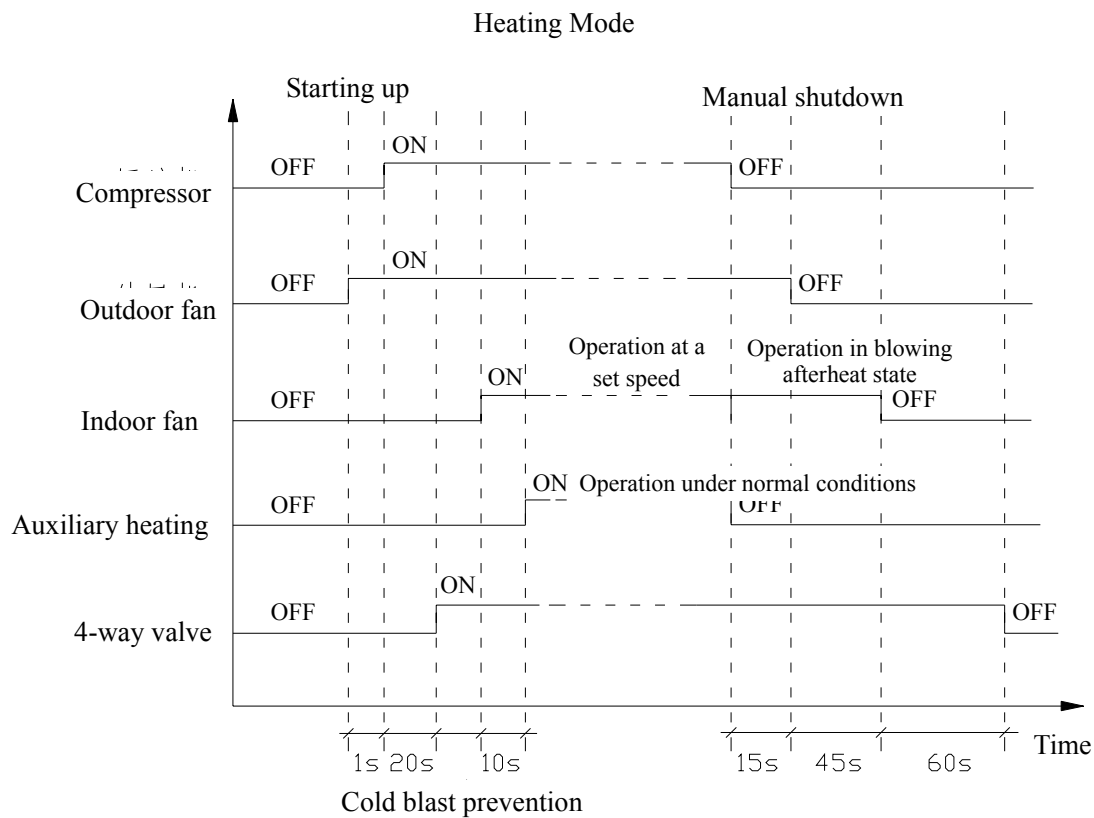


When $T_{amb} \geq T_{preset} + 2^{\circ}\text{C}$, the unit begins cooling operation and the compressor and the outdoor fan are running; and the indoor fan is running at a low speed.

When $T_{amb} \leq T_{preset} - 2^{\circ}\text{C}$, the unit is in the cooling shutdown state and the compressor and the outdoor fan stop running.

When $T_{pre} - 2^{\circ}\text{C} < T_{amb} < T_{preset} + 2^{\circ}\text{C}$, the unit is in the six-minute stop and four-minute operation state, that is, the compressor runs for 6 minutes and then stops for 4 minutes, in such cycle repeatedly; and the indoor fan operates at a low speed.

2.3 Heating Mode

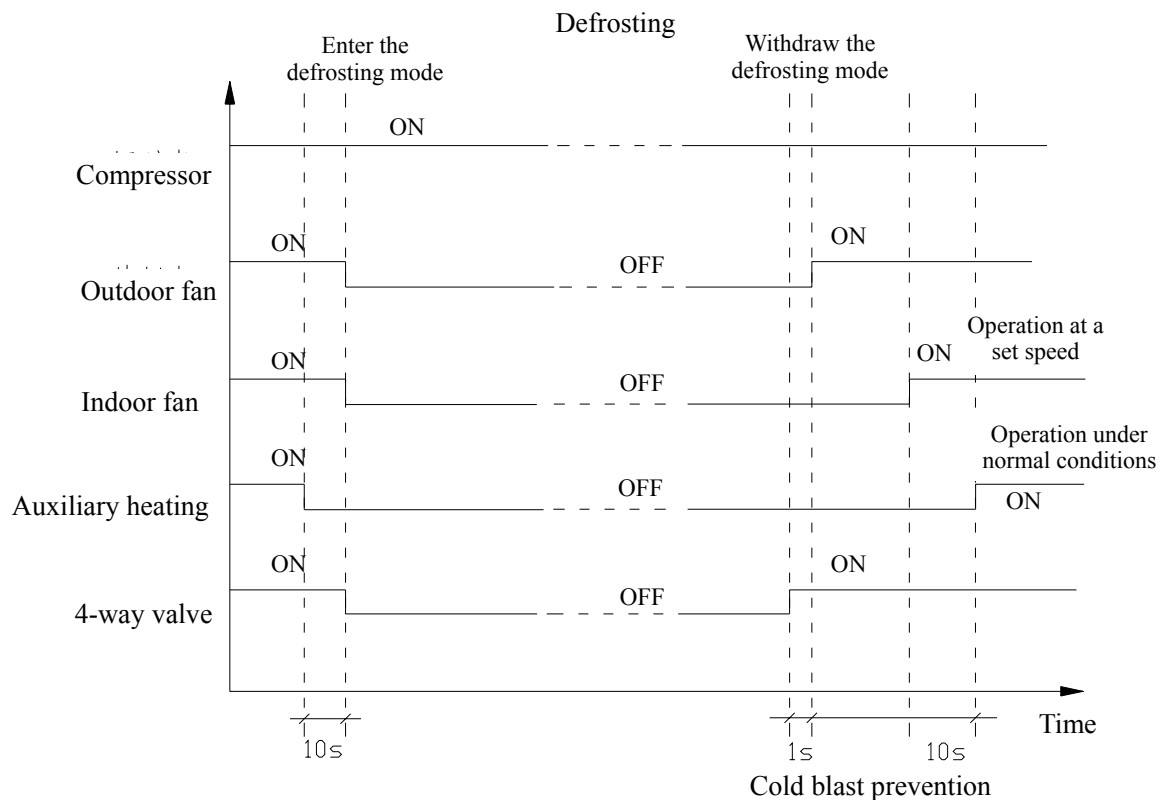


When $T_{amb.} \leq T_{preset} - 1^{\circ}\text{C}$, the unit begins heating operation and the compressor and the outdoor fan are running; and the indoor fan is running at a set speed according to cold fan prevention conditions.

When $T_{amb.} \geq T_{preset} + 1^{\circ}\text{C}$, the compressor and the outdoor fan stop running and the four-way valve keeps energized; and the indoor fan is running according to afterheat blowing conditions.

When $T_{set} - 1^{\circ}\text{C} < T_{amb.} < T_{preset} + 1^{\circ}\text{C}$, the unit keeps in the previous operation state.

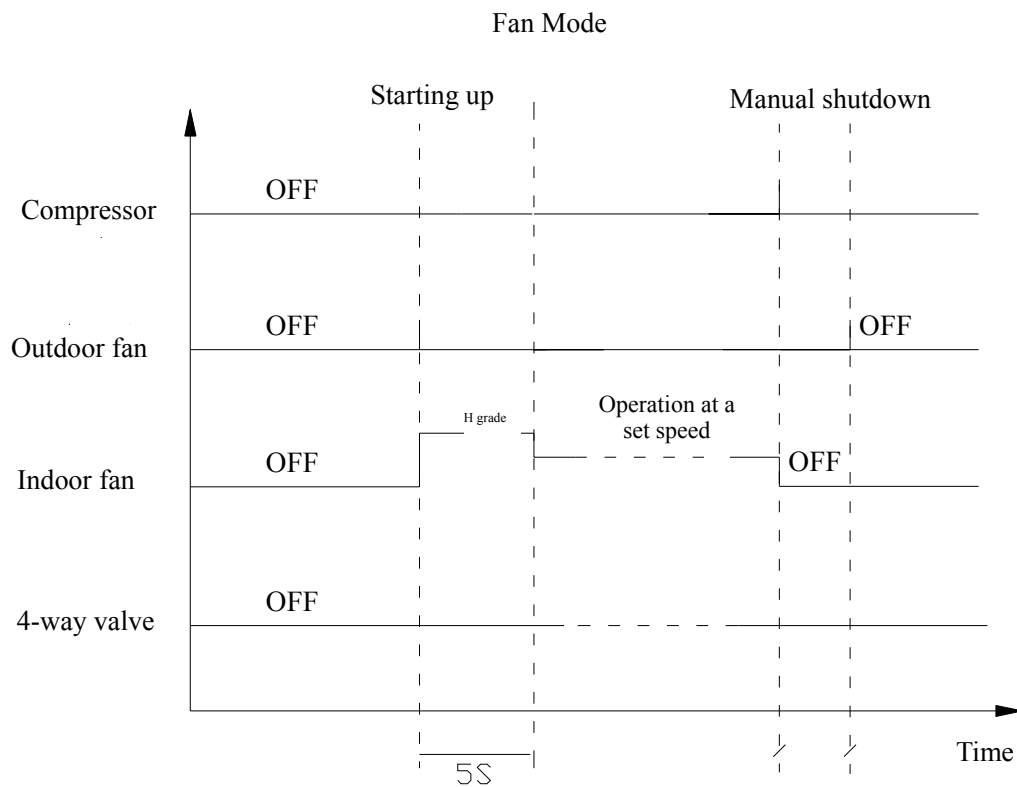
2.4 Defrosting



Defrosting start conditions: after the heating operation runs for an accumulated period of 44 minutes and the compressor continues to operate for 4 hours and 50 seconds, and a one-minute duration of $T_{\text{cond}} \leq -5^{\circ}\text{C}$ is detected, the unit begins defrosting. If an auxiliary heater is available, it must be stopped firstly, and after 10 seconds, the four-way valve, the indoor fan, the outdoor fan and the compressor will run compulsively.

Defrosting completion conditions: when defrosting runs 10 minutes or $T_{\text{cond}} \geq 10^{\circ}\text{C}$, defrosting will be completed. In such case, the four-way valve is running, the outdoor fan is running, the compressor is running compulsively, and the indoor fan operates according to cooling fan proof conditions.

2.5 Fan Mode

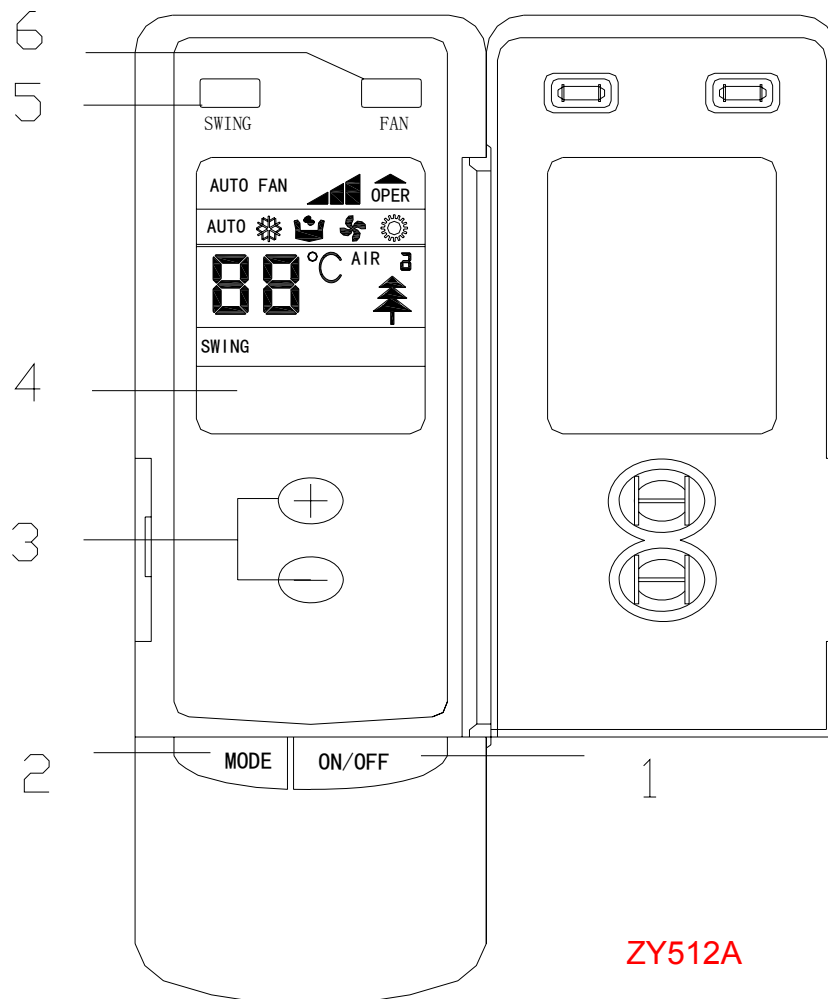


The indoor fan runs at a fast speed for 5s and then runs at a set speed.

3 WIRELESS REMOTE CONTROLLER

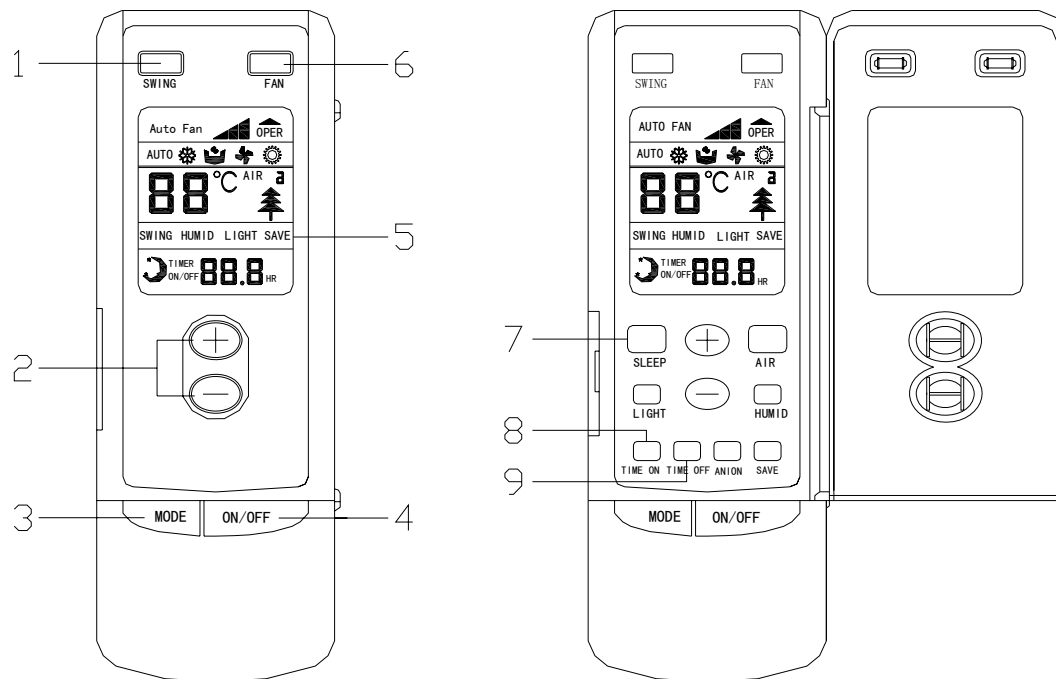
3.1 Operation View

(1) Controller-Duct Type



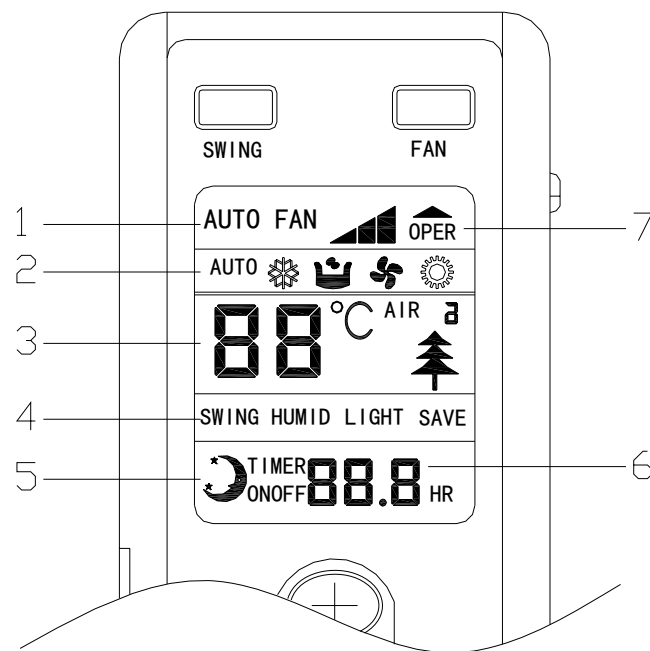
NO.	Name	Function description
1	ON/OFF button	Press the button to set start or close unit
2	Mode button	Press the button to select the mode, cooling , heating , fan or auto mode.
3	Increase/Decrease button	Press this button to increase/decrease the setup temp
4	LCD Screen	Display the status of remote information
5	Swing button	Press this button set swing function
6	Fan speed button	Press this button to set fan speed

(2)Controller-Cassette Type and Ceiling Type



NO.	Name	Function description
1	Swing button	Press this button to set swing function
2	Increase/Decrease button	Press this button to increase/decrease the setup temp
3	Mode button	Press the button to select the mode, cooling , heating , fan or auto mode.
4	ON/OFF button	Press the button to set start or close unit
5	LCD Screen	Display the status of remote information
6	Fan speed button	Press this button to set fan speed
7	Sleep button	Press the button to set sleep function
8	Time on	Press the button to set time on function
9	Time off	Press the button to set time off function

3.2 Display View

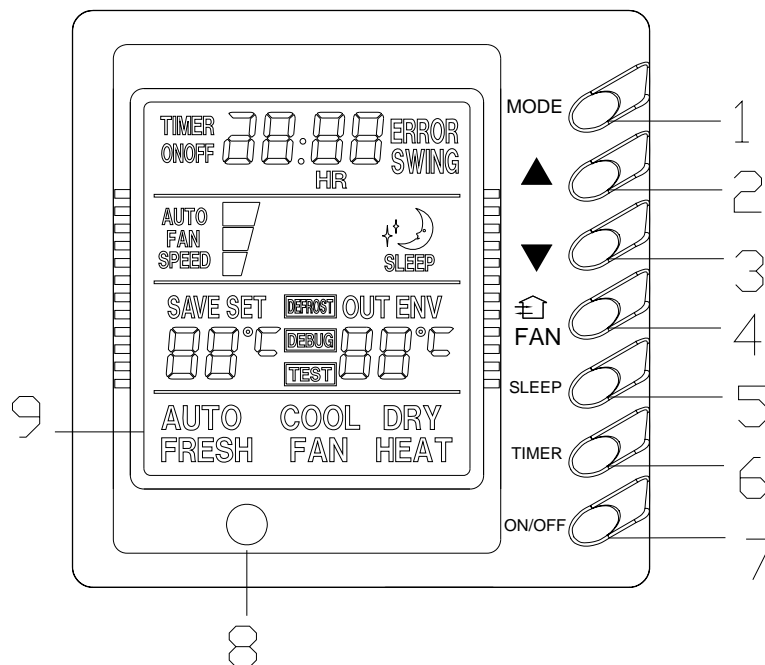


No.	Display	Function description
1	Fan Speed	AUTO FAN : auto fan speed, : low fan speed, : middle fan speed : high fan speed,
2	Run Mode	AUTO : Auto running; : Cool running; : Dry Running; : Fan Running; : Heat running (Heat and Cool unit only)
3	Setup temp	Temperature value of setting
4	Swing function	Swing is on
5	Sleep mode	Sleep mode is on
6	Time value	Timing value of setting
7	OPER	The controller is on

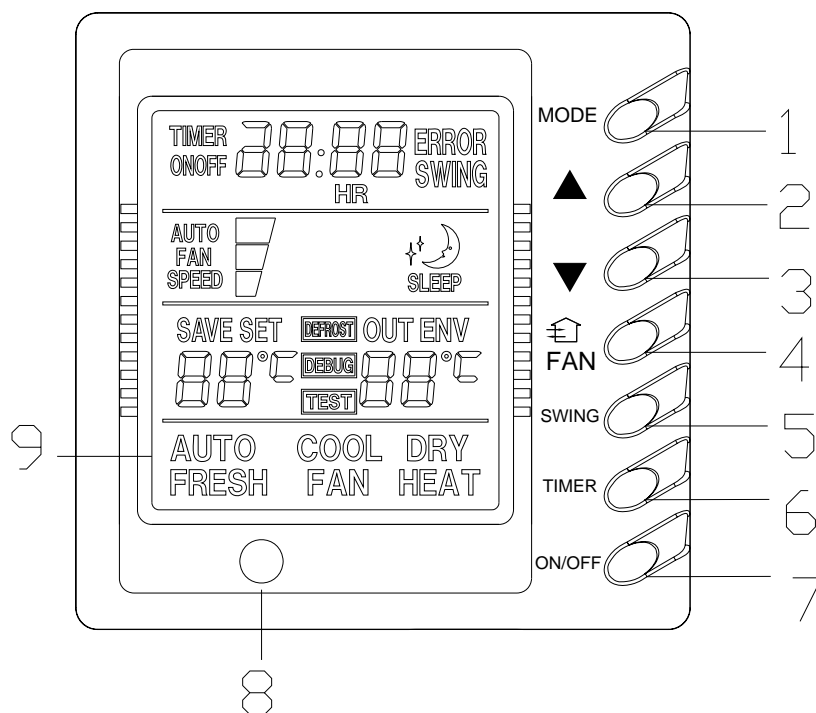
4 WIRED REMOTE CONTROLLER

4.1 Operation View

(1) Wired Controller-Duct Type **Z4B351**



(2) Wired Controller-Cassette Type and Ceiling Type **Z4B351**

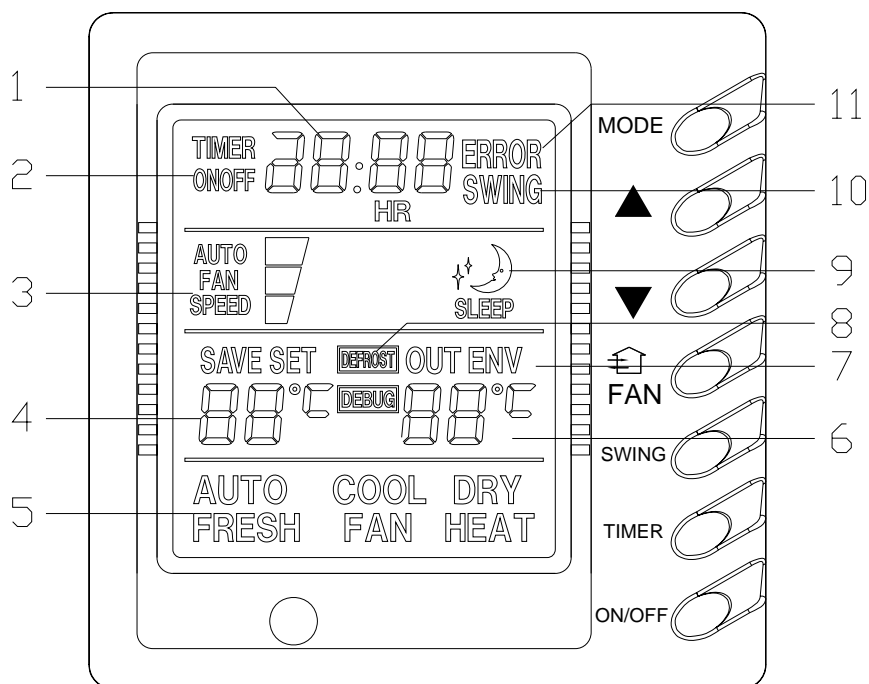


NO.	Name	Function description
1	MODE button	Press the button to select the mode, cooling , heating , fan or auto mode.
2	Increasing button	Press this button to increase the setup temp.
3	Decreasing button	Press this button to decrease the setup temp.
4	Fan speed button	Press this button to set fan speed
5	Sleep/SWING button	Press the button to set sleep/swing function
6	Timer button	Press the button to set timer function
7	On/off button	Press the button to set start or close unit
8	Remote window	Get remote information
9	LCD display	Display unit information

Note:

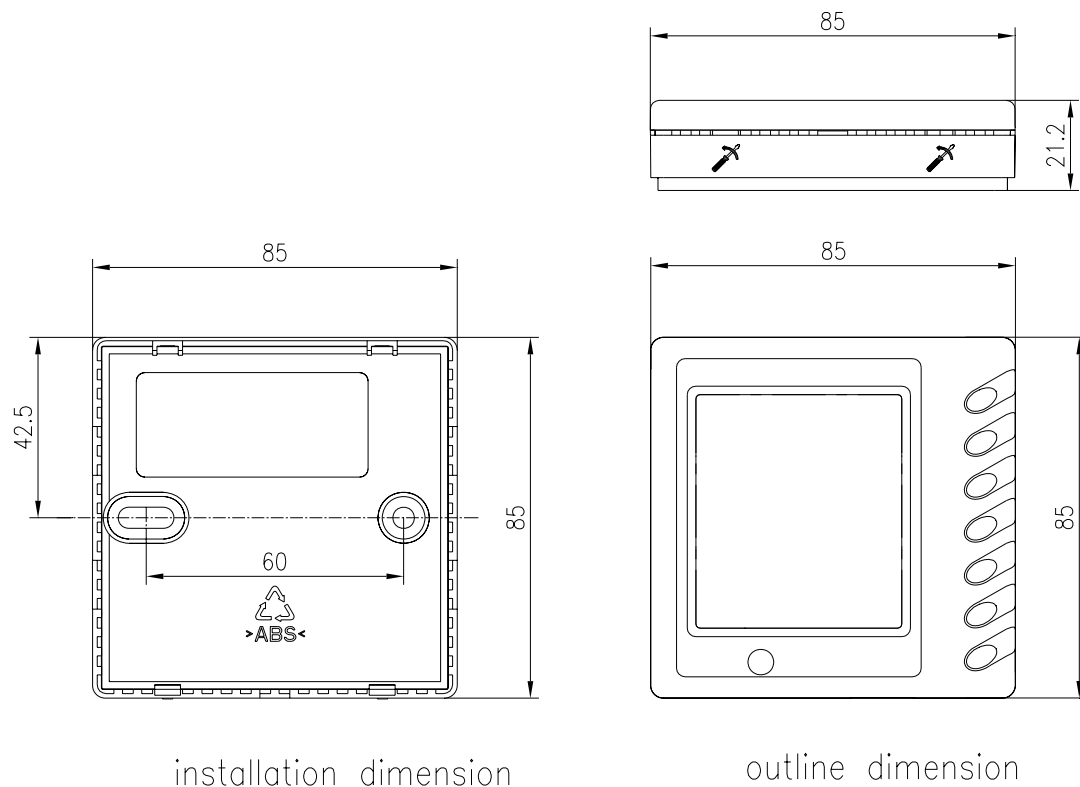
- (1) **SAVE set up** : At unit turned off, to press the “FAN” + “▼” buttons continuously 5 seconds, it can come enter save set up interphase, the unit will run at save mode.
- (2) **FRESH valve setup** : At unit is turned off, press the “ FAN” button for 5seconds,And set up the fresh air setup.
- (3) **Outer ambient temperature display**: Under normal condition, “ENV” will display the room ambient temperature, at unit turned on, or unit turned off status, press “SLEEP/SWING” button last for 5 seconds, the LCD will display “OUT ENV”.
- (4) **MEMORY function setup**: At unit turned off, press “MODE” button for 10 seconds, could switch whether turn on or off the unit state after powered off.
- (5) **Debugging function**: At unit off, continuously press “FAN” + “SLEEP” buttons lasting for 10seconds, call out debugging menu, and displays “Debugging” icons, use “MODE” button adjust setting item, by pressing “▲”, “▼” button to set up the detailed value.
(A) Ambient sensor set up: it can set three kinds styles.
- (6) **Lock function**: Press “▲”and“▼” at the same time for 5 seconds, the set temp. will display “EE” and shield, all buttons will sound; and repress the“▲”and “▼”at the same time for 5 seconds, the lock function will be released.
(for details, please read corresponding parts of manual).

4.2 Display View



NO.	Name	Function description
1	Timer value	Display time value
2	Timer on/off	TIMER ON : display timer on, TIMER OFF :display timer off,
3	Fan speed display	AUTO FAN SPEED: auto fan speed, : low fan speed, : middle fan speed, : high fan speed
4	Set temp display	Display set temp value, its range is 16~30 °C
5	Run mode display	AUTO: auto mode, COOL: cool mode, DRY: dry mode, FRESH: fresh fan mode, FAN: fan mode, HEAT: heat mode(only cool and heat unit)
6	Indoor temp display	Display surrounding temp indoor
7	Outdoor temp display	Display surrounding temp outdoor
8	Frost display	When unit frosts ,it display
9	Sleep display	Display sleep at Sleep mode
10	Swing display	When setting swing function, it displays,
11	Error display	When unit error, error code display

4.3 Dimension



4.4 Installation

1. First select an installation position. According to the size of the communication line of the wire controller, leave a recess or a embedded wire hole to bury the communication line.
2. If the communication line between the wire controller (85×85×20) and the indoor unit is surface-mounted, use 1# PVC pipe and make matching recess in the wall (refer to Figure 6); If concealed installation is adopted, 1# PVC pipe can be used (Refer to Figure 7).
3. No matter if surface mounting or concealed mounting is selected, it is required to drill 2 holes (in the same level) which distance shall be the same as the distance (60mm) of installation holes in the bottom plate of the wire controller. Then insert a wood plug into each hole. Fix the bottom plate of the wire controller to the wall by using the two holes. Plug the communication line onto the control panel. Lastly install the panel of the wire controller.

Caution:

During the installation of the bottom plate of the wire controller, pay attention to the direction of the bottom plate. The plate's side with two notches must be at the lower position, and otherwise the panel of the wire controller cannot be correctly installed.

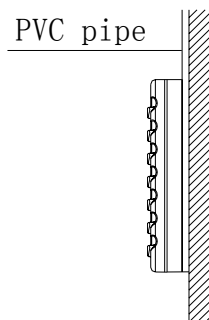


Fig6: Surface Mounting of Cable

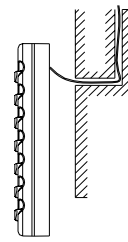


Fig7: Concealed mounting of Cable

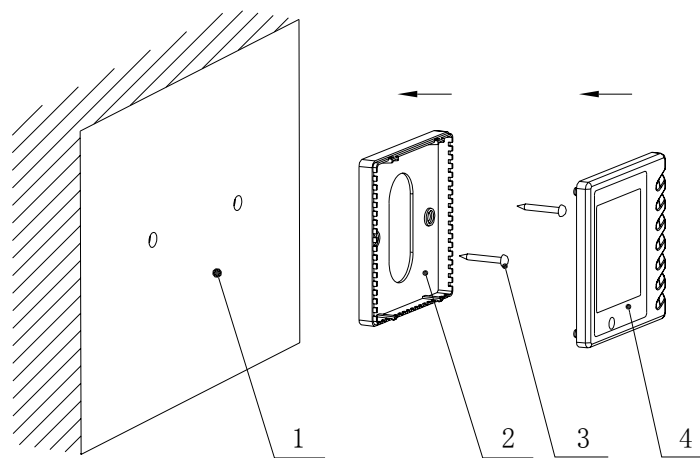


Fig 8 Schematic Diagram of Installation

No.	Name
1	Wall Surface
2	Bottom Plate of Wire Controller
3	Screw M4X10
4	Panel of Wire Controller

⚠ Caution:

1. The communication distance between the main board and the wire controller can be as far as 20m (The standard distance is 8m).
2. The wire controller shall not be installed in a place where there is water drop or large amount of water vapor.

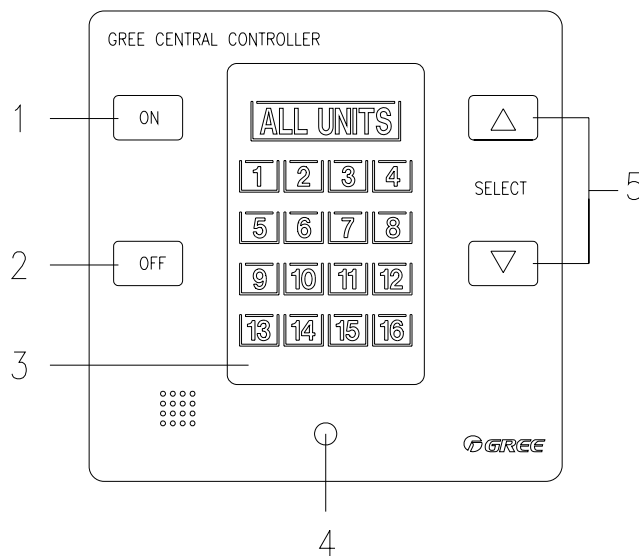
5 CENTRALIZED CONTROLLER

5.1 Centralized Controller-not with week timer

5.1.1 Function

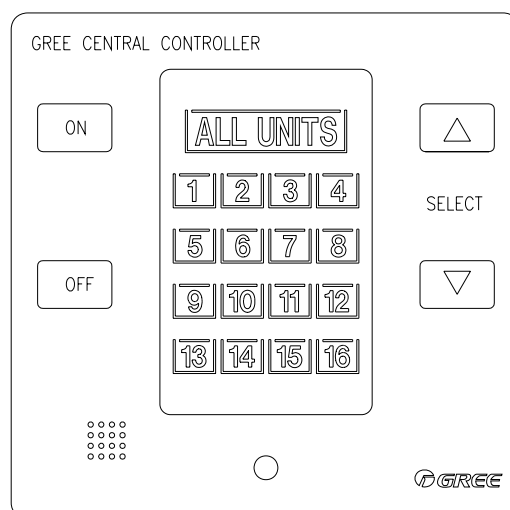
Centralized Controller-not with week timer only control on-off function of every units. Up to 16 sets of units can be controlled simultaneously by the centralized controller-not with week timer.

5.1.2 Operation View



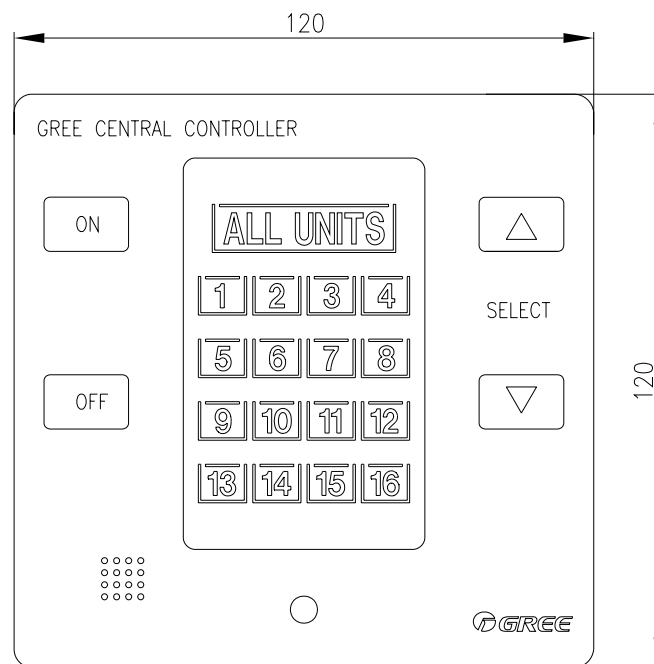
NO.	Name	Function description
1	ON button	Press the button to set start unit
2	OFF button	Press the button to set close unit
3	LCD display	Display unit information
4	LED	LED indication
5	Increasing / Decreasing button	Press buttons select the unit

5.1.3 Display View



Display unit address value in the net.

5.1.4 Dimensions

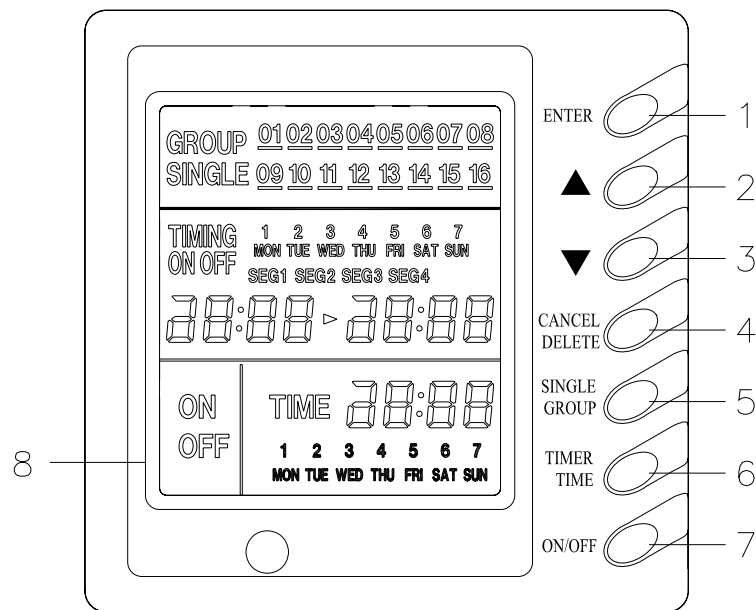


5.2 Centralized Controller-week timer

5.2.1 Function

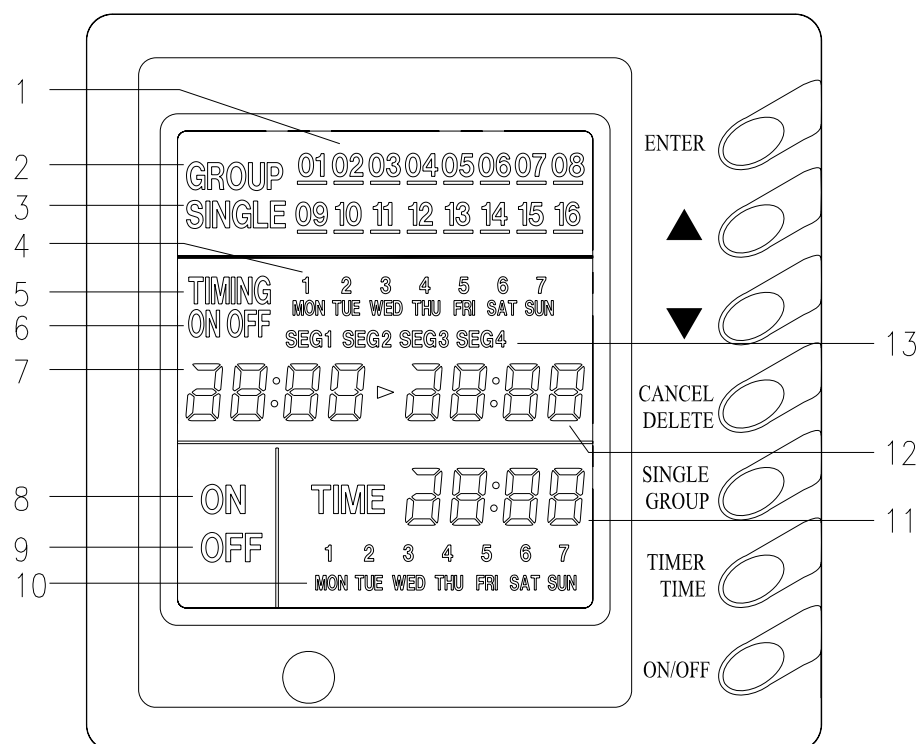
Centralized Control and Week Timer Functions: The centralized controller and the weekly timer are integrated in the same wire controller. The system has both the centralized control and the week timing functions. Up to 16 sets of units can be controlled simultaneously by the centralized controller (weekly timer). The weekly timer has the function of invalidating the lower unit. The weekly timing function is able to realized four timing ON/OFF periods for any unit every day, so as to achieve fully automatic operation. No timing control can be set for holidays. On and off of every duct type unit can be done through the Timer On / Off of this WEEKLY TIMER, it can not set other functions except on-off function of units.

5.2.2 Operation View



NO.	Name	Function description
1	ENTER button	when “ enter ” is pressed the setting is validate.
2	Increasing button	Press “▲” and selected the unit or a certain day in one week or specific value. Press “▲” can set week part of time.
3	Decreasing button	Press “▼” and selected the unit or a certain day in one week or specific value. Press “▼” can set week part of time.
4	CANCEL/DELETE button	short-press “ cancel/delete ” to back to default page or last process, long-press “ cancel/delete ” to cancel timer of a certain time period in a certain day
5	SINGLLE/GROUP button	short-press “ single/group ” to enter single control setting. “ SINGLE ” displayed. long-press “ single/group ” to enter group control setting. “ GROUP ” displayed
6	TIMER/TIME button	Short-press “ timer/time ” to enter timer setting. Long-press “ timer/time ” under default page can begin time setting.
7	On/off button	Control unit run or stop
8	LCD display	Display unit information

5.2.3 Display View

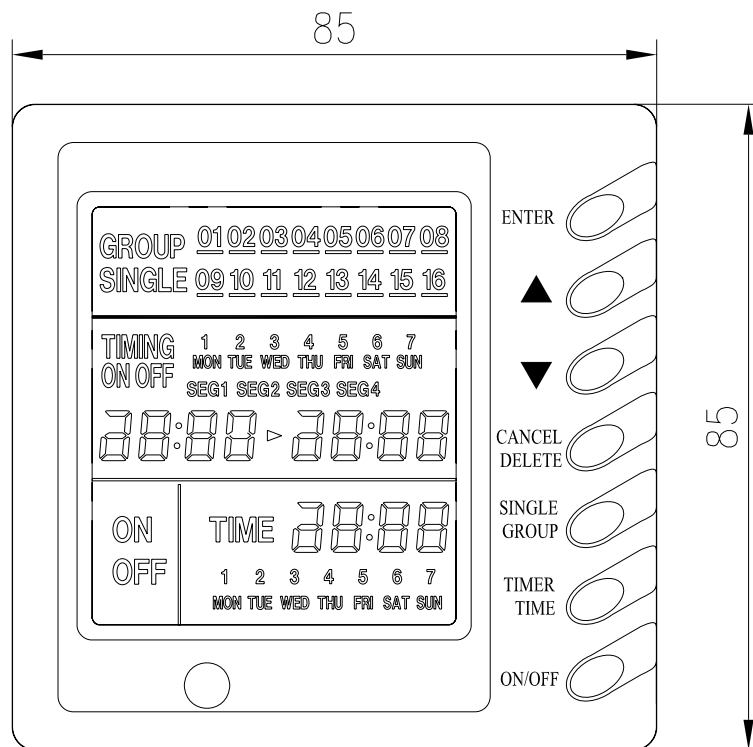


NO.	Name	Function description
1	unit's no. displays	Display unit's numbers
2	Group control displays	when group controls, it will display
3	Single control displays	when single unit controls, it will display
4	Timer time in week displays	Display time in week
5	Timer displays	Display time
6	timer state displays	"on": when set unit on, "on" will display; "off": when set unit off, "off" will display;
7	timer on time displays	Display starts time
8	on control displays	When set unit or group on, it will display,
9	off control displays	When set unit or group off, it will display,
10	present time in week display	Display present time of week.
11	present time in Hr:Min displays	Display time of hour and minute now
12	timer off time displays	Display over time
13	timer period displays	Set to different time segment

Note:

Please read corresponding manual of weekly timer controller to be familiar with it.

5.2.4 Dimensions



5.3 Field Setting

The centralized controller displays code of various units: unit code is determined by the position (on the back of the manual operator) of the toggle switch of the manual operator on each flue pipe air conditioner. Toggling values are corresponding to the 4-1 feet from the right to left of the toggle switch. “ON” stands for “0”, and conversely, “OFF” stands for “1”

Example 1: to get “0111”, which represents the serial number “8”, you can put foot 1, 2 and 3 of the toggle switch to the opposite of “ON” and foot 4 to “ON”.

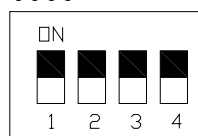
Example 2: to get “1010”, which represents the serial number “11”, you can put foot 2 and 4 of the toggle switch to the opposite of “ON” and foot 1 and 3 to “ON”.

Position	Serial No.	Position	Serial No.	Position	Serial No.	Position	Serial No.
0000	1	0100	5	1000	9	1100	13
0001	2	0101	6	1001	10	1101	14
0010	3	0110	7	1010	11	1110	15
0011	4	0111	8	1011	12	1111	16

As shown in the following diagram:

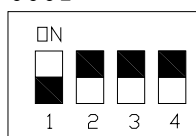
Unit code:1

0000



Unit code:2

0001



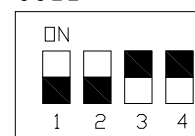
Unit code:3

0010



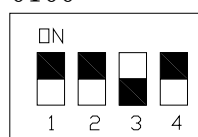
Unit code:4

0011



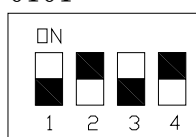
Unit code:5

0100



Unit code:6

0101



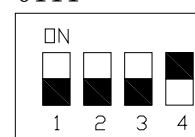
Unit code:7

0110



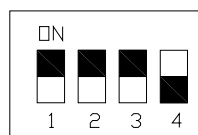
Unit code:8

0111



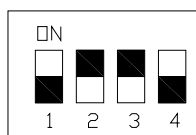
Unit code:9

1000



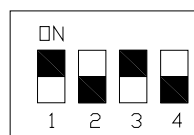
Unit code:10

1001



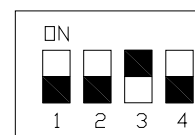
Unit code:11

1010



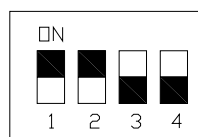
Unit code:12

1011



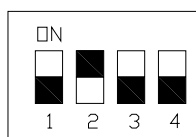
Unit code:13

1100



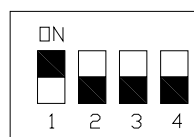
Unit code:14

1101



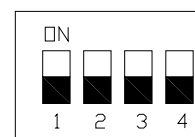
Unit code:15

1110

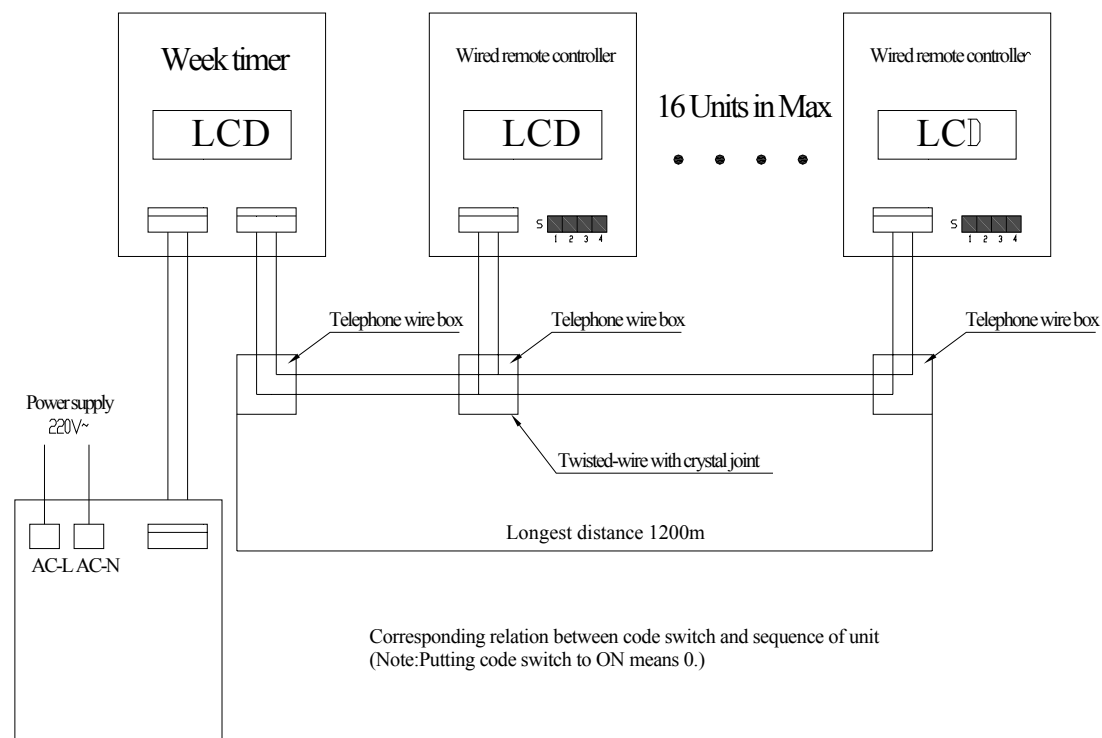


Unit code:16

1111



5.4 Control Wiring Design



P	S	P	S	P	S	P	S
0000	1	0010	5	0001	9	0011	13
1000	2	1010	6	1001	10	1011	14
0100	3	0110	7	0101	11	0111	15
1100	4	1110	8	1101	12	1111	16

INSTALLATION

INSTALLATION

1 INDOOR UNIT INSTALLATION

1.1 Installation of Duct Type

1.1.1 Before Installation

- ◆ When the unit arrives, please check if any damage due to transport is existent. If any hurt is found on the surface or inside, please declare to the transport company or the manufacturer in writing.
- ◆ Upon receipt of the unit, the unit and accessories shall be checked in accordance with the packing list. Before acceptance, it must be confirmed that the model is correct and the unit is in good shape and specification and quantity of accessories are right.
- ◆ Correct handling route and method shall be decided to prevent damage to the unit. For protecting the unit and ensuring its safety, carrying the unit with its package is recommended. If such carrying method is difficult under particular conditions, the canton shall not be removed to avoid looseness or falling during handling
- ◆ Confirm the foundation is secure. When the unit is installed on the metal part of a building, electrical insulation must be in compliance with relevant standards.
- ◆ Confirm the installation position is away from storage zone of inflammable and explosive substances, or otherwise leakage of inflammable and explosive substances may lead to explosion or a fire.

1.1.2 Installation Site

- ◆ Ensure the top hanging piece has strong strength to withstand the weight of the unit.
- ◆ The drainage pipe has convenient flow of water.
- ◆ There is no obstacle blocking the air intake and exhaust outlet, so as to ensure sound air circulation.
- ◆ The installation spaces required by the drawing must be ensured, so as to provide enough space for the service and maintenance.
- ◆ The installation site must be far away from heat source, leakage of inflammable gas or smoke.
- ◆ The indoor unit is of ceiling mount (indoor unit is hidden inside the ceiling).
- ◆ The indoor and outdoor units, the power cable and the connecting electrical lines must be at least 1 meter from any TV set or radio. This is to avoid image interference or noise of the TV set or radio. (Even if the distance is 1 meter, noise can also exist if there is strong electric wave.)

1.1.3 Caution for Installation

- 1) Ceiling installation mode is applicable to units indoors. The suspender on the ceiling must have sufficient intensity to bear the weight of the unit.
- 2) Rubber cushion pads (thickness $\geq 20\text{mm}$) and flexible rubber connectors must be used in the installation of units to meet noise and vibration prevention requirements.
- 3) Insert a M10 expansion bolt into the hole. Drive a nail into the bolt. Refer to the profile dimensions drawing of the indoor unit for the distance between the holes. Refer to Figure 1 for the installation of the expansion bolt, as Figure 1-1-1 shows.

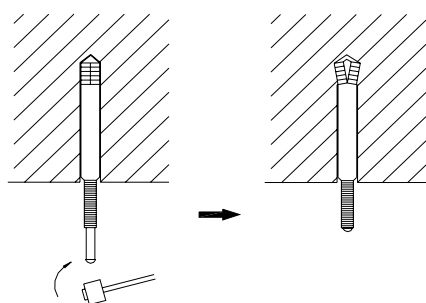


Figure 1-1-1

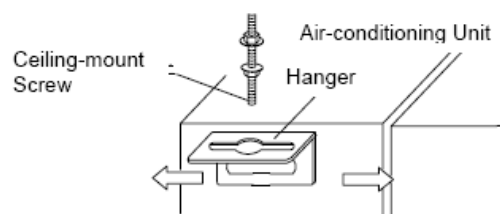


Figure 1-1-2

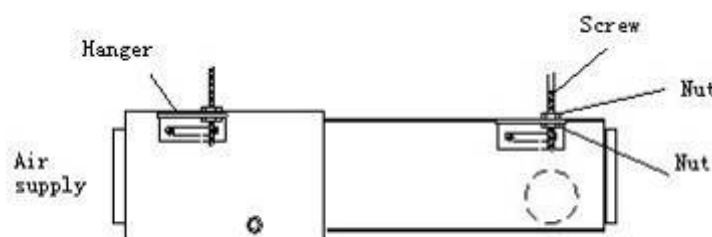


Figure 1-1-3

4) Install the hanger onto the indoor unit as Figure 1-1-2 and Figure 1-1-3 shows.

5) Install the indoor unit at the ceiling as Figure 1-1-5 shows.

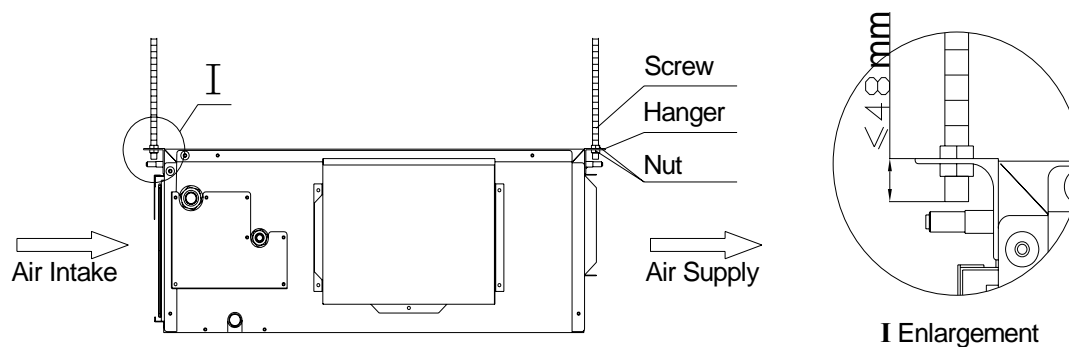


Figure 1-1-5

6) Precautions for unfavorable installation:

- ◆ The preparation of all pipes (connecting pipes and drainage pipes) and cables (connecting lines of wire controller, indoor unit and outdoor unit) must be ready before the installation, so as to achieve smooth installation.
- ◆ Drill an opening on the ceiling. Maybe it is required to support the ceiling to ensure the evenness of it and avoid the vibration of it. Consult with the user or a construction company for details.
- ◆ In case the strength of ceiling is not enough, use angle iron sections to set up a beam support. Place the unit at the beam and fix it.

7 Level detection of indoor unit

After installation of indoor unit, level detection for the complete unit must be done to ensure levelness, as shown in Fig. 1-1-6.

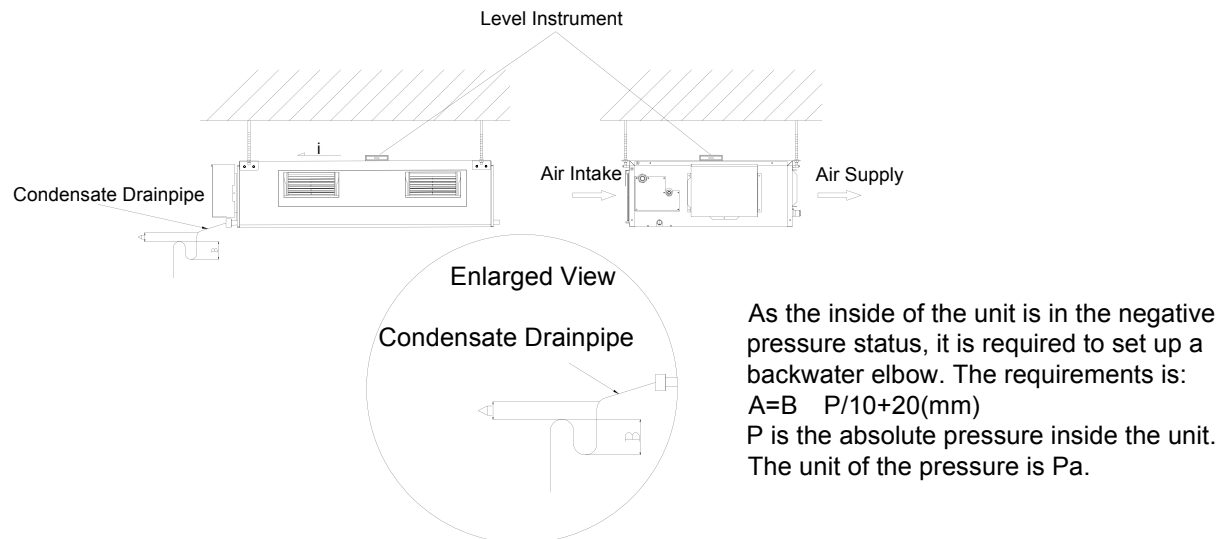
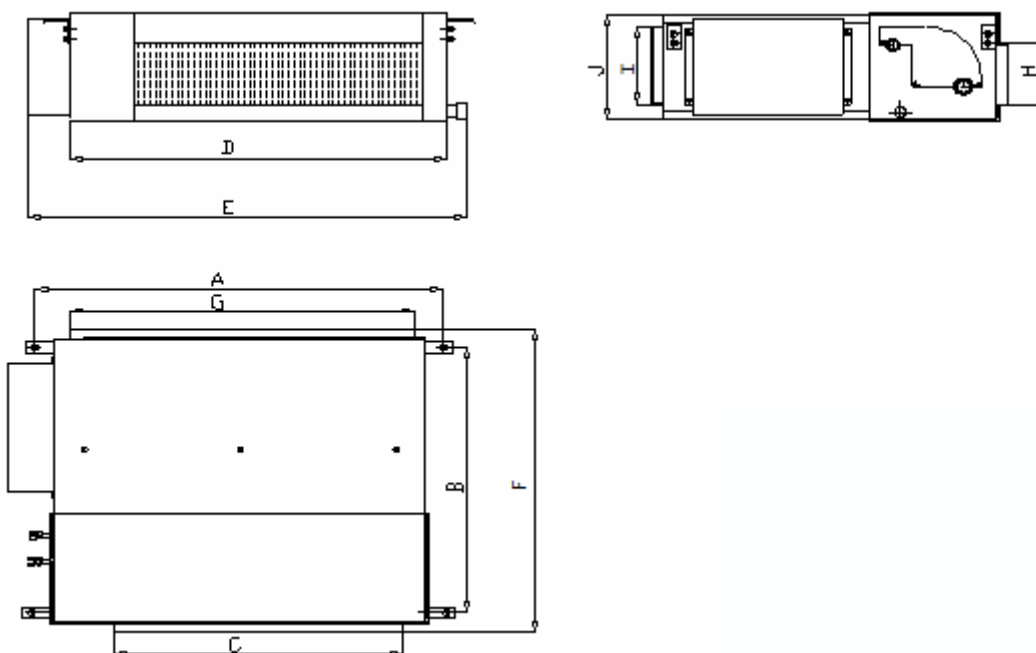


Figure 1-1-6

1.1.4 Dimension Data

à ^ Á • ~ ã c Á ~ [! K Á Œ Û Ö W Ě € J Œ Ê Á Œ Û Ö W Ě F G Œ Ê Á Œ Û Ö W Ě F ì Œ



suit for: ASDU-24A, ASDU-36A, ASDU-42A, ASDU-48A, ASDU-60A

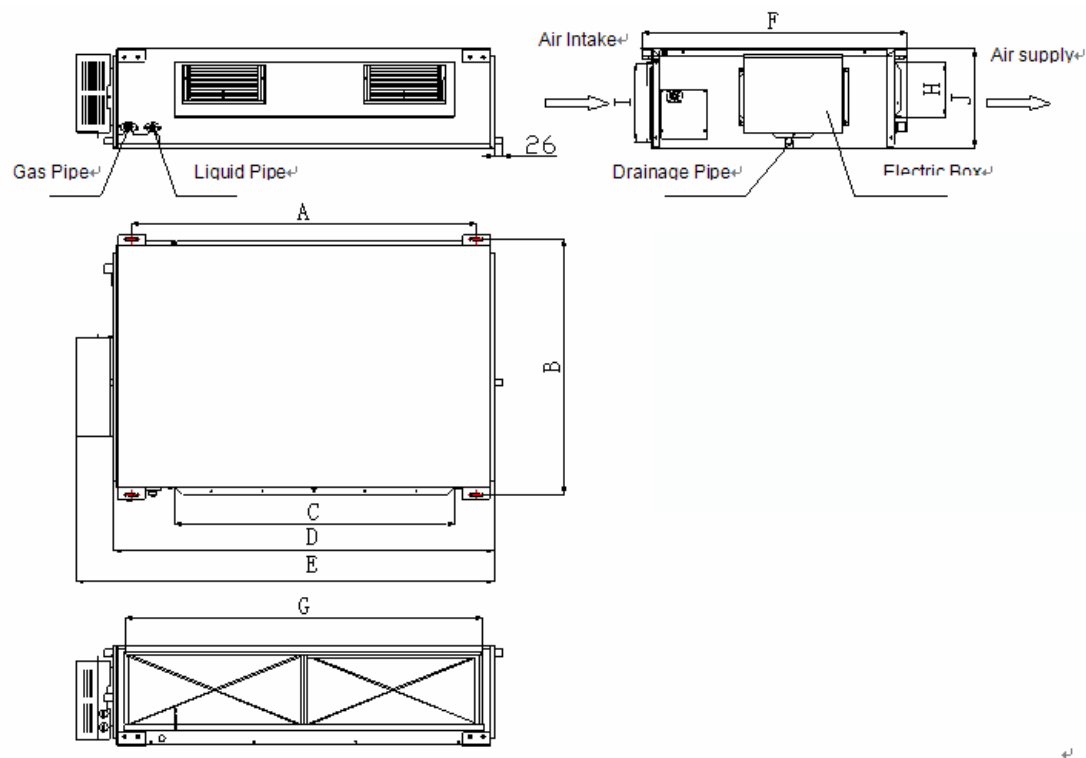


Figure 1-1-7

Dimension Data Duct Unit

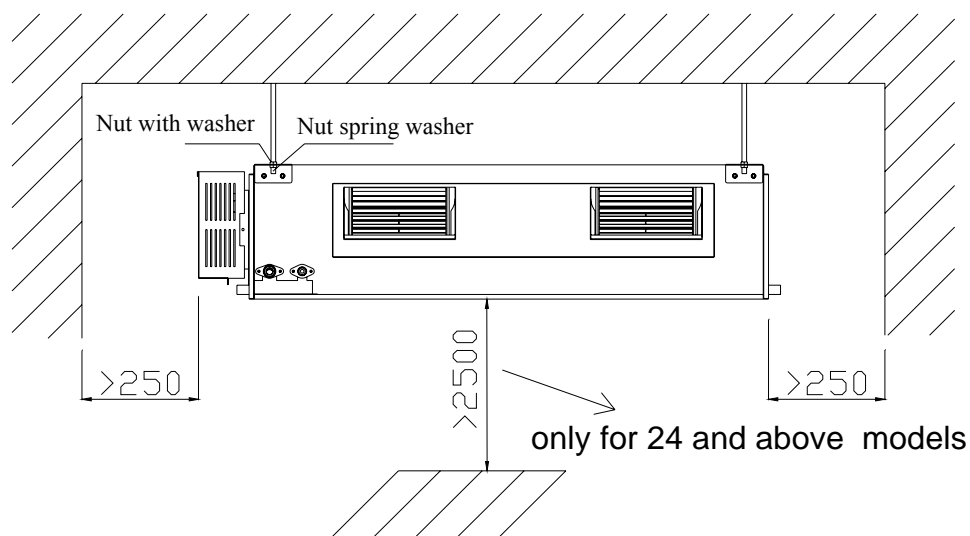
Unit : mm

Model	A	B	C	D	E	F	G	H	I	J
ASDU-09A	856	571	515	790	913	680	750	100	172	220
ASDU-12A										
ASDU-18A	932	430	738	894	1012	736	738	125	207	266
ASDU-24A	1101	515	820	1159	1270	530	1002	160	235	268
ASDU-36A	1011	748	820	1115	1226	775	979	160	231	290
ASDU-42A										
ASDU-48A										
ASDU-60A	1015	788	820	1115	1226	815	979	160	261	330

List of Accessories for Installation of Indoor Unit

Designation and shape	Qty	Description
Operation and installation instructions	1	
Heat insulating material for large connector	1	For air pipe connector of indoor unit
Heat insulating material for small connector	1	For refrigerant pipe connector of indoor unit
Heat insulation material for drain pipe	2	For packing condensate pipe and rubber plug
Nut with washer M8	8	For fixing the hanging hook
Nut with washer M10	4	Four sets, for hoisting the unit on the ceiling
Nut and spring washer	4	
Hanging hook	4	For hoisting the unit on the ceiling
Wire binding tie	4or 8	4 for a two-horsepower unit, 8 for other unit.
Wire controller	1	
Remote controller	1	
Battery	2	
Bellow	0, 2 or 4	0 for a 2-powerhorse unit, 2 for a 2.5—3 horsepower unit, 4 for a 4—5 horsepower unit.
Power cable	1—2	2 for a 4—5 horsepower unit and 1 for other unit.
Connecting cable	2—3	3 for a 4—5 horsepower unit and 2 for other unit.

1.1.5 Installation Clearance Data



Indoor Unit Figure 1-1-8

1.1.6 Drain Piping Work

1) Installation of Drainage Pipeline

- ◆ A drainage outlet is located at both the left and right sides of the indoor unit. After selecting one drainage outlet, the other outlet shall be blocked by rubber plug. Bundle the blocked outlet with string to avoid leakage, and also use thermal insulation materials to wrap the blocked outlet.
- ◆ When shipped out from factory, both the Drainage outlets are blocked by rubber plugs.
- ◆ When connecting the drainage pipe with the unit, do not apply excessive force to the pipeline at the side of the unit. The fixing position of the pipeline shall be near the unit.
- ◆ Purchase general-purpose hard PVC pipe locally to be used as the drainage pipeline. When carrying out connection, place the end of the PVC pipeline into the drainage hole. Use flexible drainage tube and tighten it with thread loop. Never use adhesive to connect the drainage hole and the flexible drainage tube. (As shown in Figure 1-1-9)
- ◆ When the laid drainage pipe is used for multiple units, the common pipe shall be about 100mm lower than the drainage outlet of each set of unit. A pipe with thicker wall shall be used for such purpose.

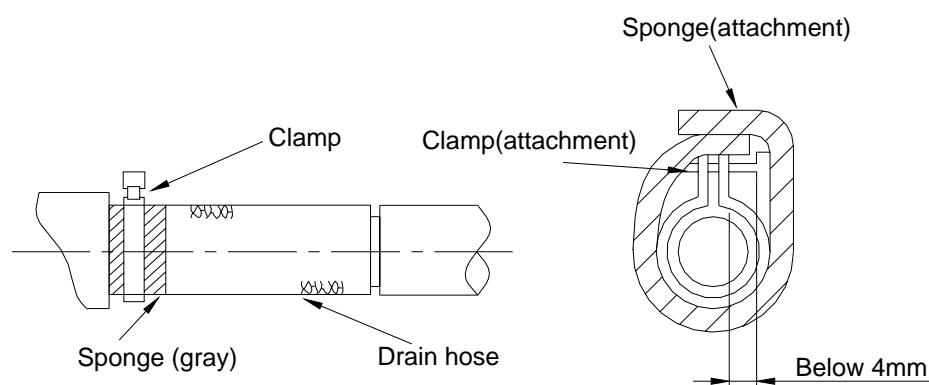


Figure 1-1-9

2) Testing of Drainage System

- ◆ After the electrical installation is completed, carry out the testing of the drainage system.
- ◆ During the test, check if the water correctly flows through the pipelines. Carefully observe the joints to ensure that there is no leakage. If the unit is to be installed in a new house, carry out testing before decorating the ceiling.

3) Matters of Attention

- ◆ The joint of Drainage Pipeline must not have leakage.
- ◆ The Drainage Pipeline shall be installed with an inclining angel of 5~10°, so as to facilitate the drainage of condensate. The joints of the Drainage Pipeline must be covered by thermal insulation materials to avoid generation of exterior condensate. (As shown in Figure 1-1-10)

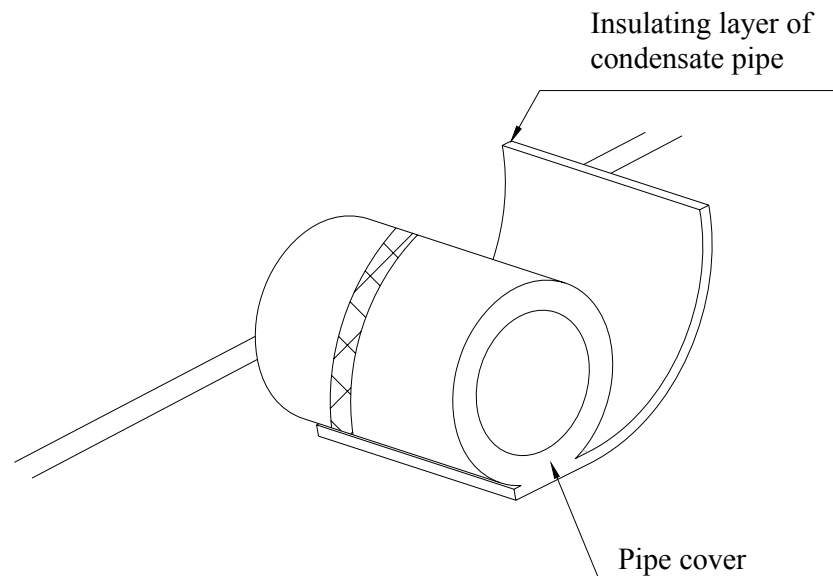


Figure 1-1-10

1.1.7 Installation of air pipes and openings

Caution:

- ◆ The air supply pipe, the air intake pipe and the fresh air pipe must be covered with a layer of thermal insulation, so as to avoid thermal leakage and condensation. Firstly apply liquid nail on the pipes, then attach the thermal insulation cotton with a layer of tinfoil. Use the liquid nail cover to fix it. Lastly use tinfoil adhesive tape to carefully seal the joints; other good thermal insulation materials can also be used.
- ◆ The air supply pipes and the air intake pipes shall be fixed to the prefabricated boards of the ceiling by using iron supports. The joints of the pipes must be sealed by glue so as to avoid leakage.
- ◆ The design and installation of air pipes must be in conformity with the relevant state engineering criteria.
- ◆ The edge of the air intake pipe must be at least 150mm away from the wall. The air intake must be covered with filter.
- ◆ Silencing and shock absorption shall be considered in the design and installation of the air pipes. Additionally, the noise source must be far away from where people stay. The air intake shall not be located above the place where users stay (offices and rest places, etc.).

1) Installation of air supply duct

- ◆ Installation of rectangular air duct, as shown in Figure 1-1-11

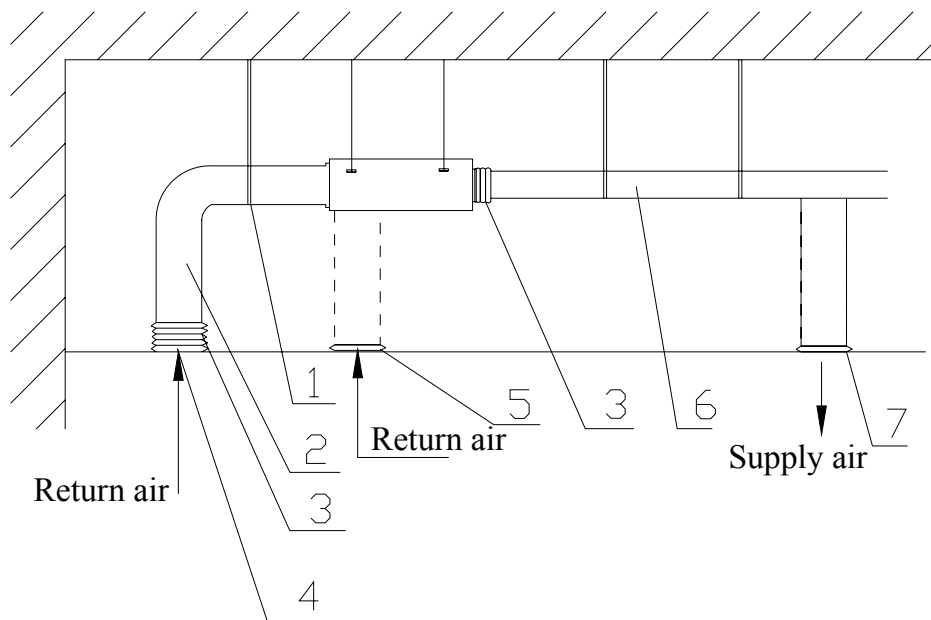


Figure 1-1-11

No.	Designation	No.	Designation
1	Hanger rod	5	Filter screen
2	Return duct	6	Main air supply duct
3	Canvas duct	7	Air outlet
4	Return air inlet		

- ◆ Installation of circular duct, as shown in Figure 1-1-12

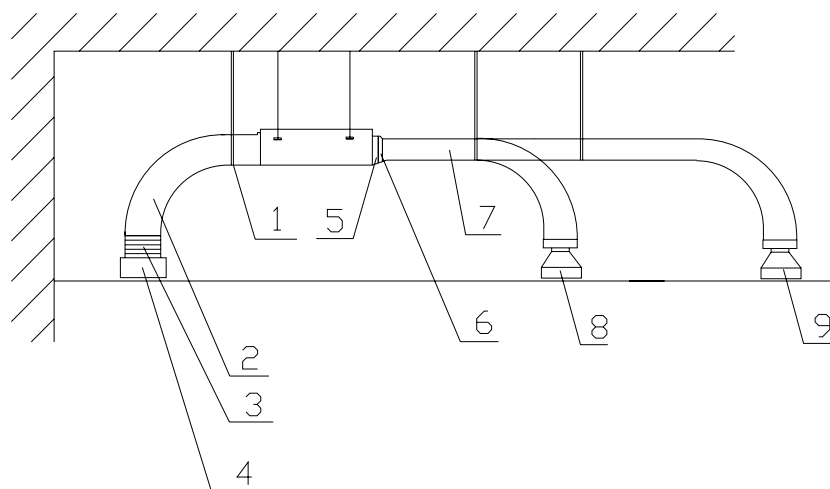


Figure 1-1-12

No.	Designation	No.	Designation
1	Hanger rod	6	Transition duct
2	Air return duct	7	Air supply duct
3	Canvas duct	8	Air diffuser
4	Return air shutter	9	Connector of air diffuser
5	Air outlet		

Note:

The above two diagrams show how back return air inlets are installed. Lower return air inlets shall be used according to actual installation demands. The installation method is similar to the back return air inlets. Among all air outlets, at least one keeps open. If circular duct is in use, air shall be supplied to rooms through circular flexible insulating duct. Air supply duct and return duct shall be heat insulated.

2) Installation of fresh air duct (only limited to excessive pressure units with refrigerating output over 6000W)

- ◆ The fresh air battle, as shown in Figure 1-1-13(a), must be removed for mounting the fresh air duct. If the fresh air duct is not in use, gaps around the battle shall be sealed by sponge.
- ◆ Circular flanges are mounted for convenient connection of the fresh air duct, as shown in Figure 1-1-14(b)
- ◆ Ducts and circular flanges must be sealed and insulated sufficiently.
- ◆ Fresh air must be filtered air.

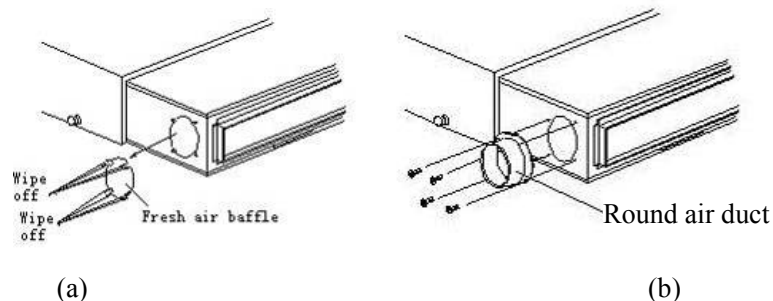


Figure 1-1-13

3) Installation of air return duct

- ◆ Square flanges at ex-factory shall be defaulted to installation at the back and the air return cover plate shall be mounted at the lower, as shown in figure 1-1-14.

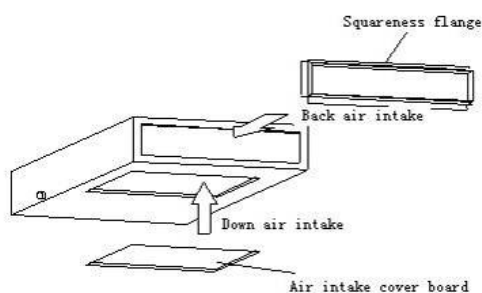
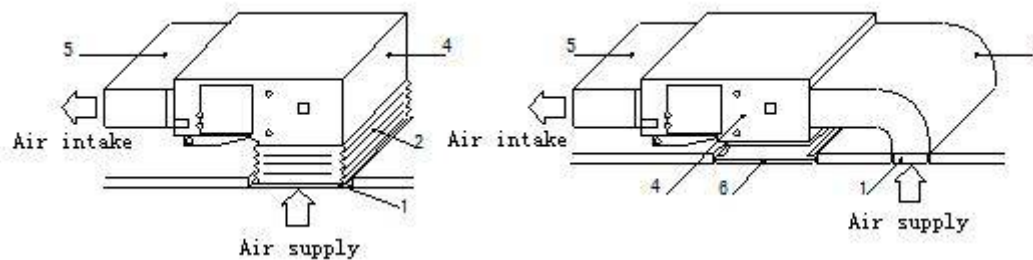


Figure 1-1-14

- ◆ If lower air return is demanded, the square flange and the air return cover plate should be exchanged in their respective position.
- ◆ The air return duct shall be connected to the air return inlet on the indoor unit with rivets, and the other end of the air return duct is connected to an air return window. To freely adjust the height, a section of canvas duct can be fabricated and reinforced by 8 # iron wires in the folding shape. A proper installation method shall be selected by taking into overall consideration of building and maintenance conditions.



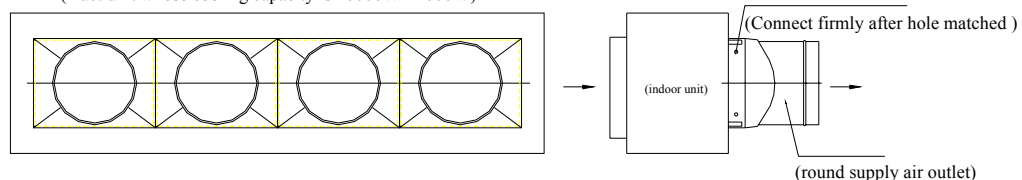
No.	Designation	No.	Designation
1	Air return window (with filter screen)	4	Indoor unit
2	canvas duct	5	Air supply duct
3	Air return duct	6	Check grating

Figure 1-1-15

4) Installation of circular air supply outlet

(Installation sketch for round supply air outlet)

(Duct unit whose cooling capacity is 10000W-12000W)



(Duct unit whose cooling capacity is 6500W-8000W)

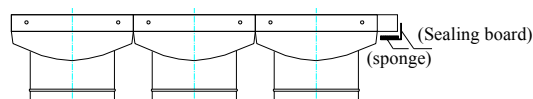
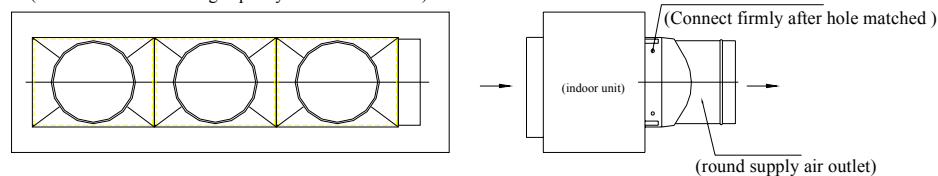
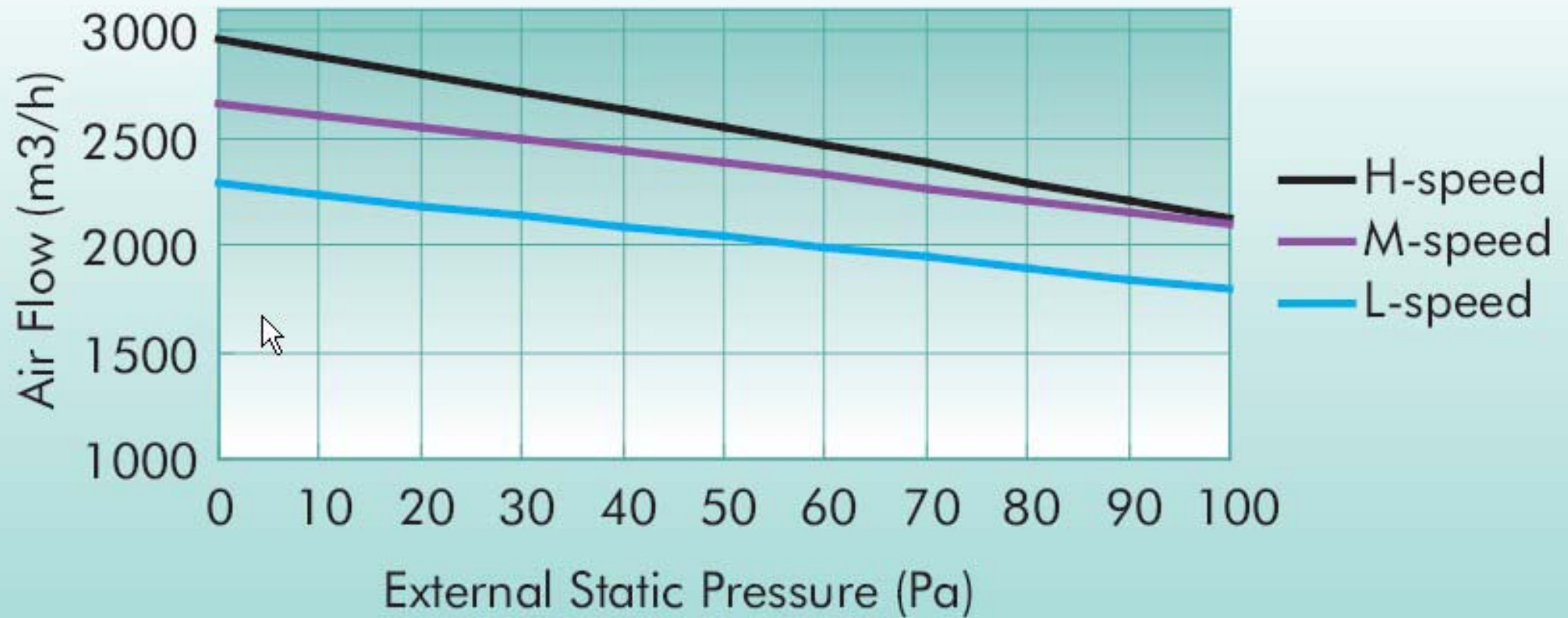


Figure 1-1-16

ASDU-60A



1.2 Installation of Ceiling Type

1.2.1 Before Installation

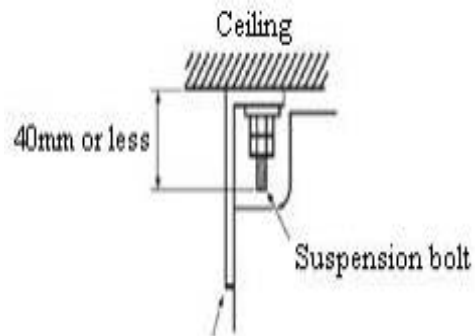
- ◆ When the unit arrives, please check if any damage due to transport is existent. If any hurt is found on the surface or inside, please declare to the transport company or the manufacturer in writing.
- ◆ When the unit arrives, please check if any damage due to transport is existent. If any hurt is found on the surface or inside, please declare to the transport company or the manufacturer in writing.
- ◆ Correct handling route and method shall be decided to prevent damage to the unit. For protecting the unit and ensuring its safety, carrying the unit with its package is recommended. If such carrying method is difficult under particular conditions, the canton shall not be removed to avoid looseness or falling during handling.
- ◆ Confirm the foundation is secure. When the unit is installed on the metal part of a building, electrical insulation must be in compliance with relevant standards.
- ◆ Confirm the installation position is away from storage zone of inflammable and explosive substances, or otherwise leakage of inflammable and explosive substances may lead to explosion or a fire.

1.2.2 Installation Site

- ◆ Such a place where cool air can be distributed throughout the room.
- ◆ Such a place where condensation water is easily drained out.
- ◆ Such a place that can handle the weight of indoor unit.
- ◆ Such a place which has easy access for maintenance.
- ◆ Such a place where is permitting easy connection with the outdoor unit.
- ◆ Such a place where is 1m or more away from other electric appliances such as television, audio device, etc.
- ◆ Avoid a location where there is heat source, high humidity or inflammable gas.
- ◆ Do not use the unit in the immediate surroundings of a laundry, a bath, a shower or a swimming pool.
- ◆ Be sure that the installation conforms to the installation dimension diagram.
- ◆ The space around the unit is adequate for ventilation

1.2.3 Caution for Installation

- ◆ Adjust the distance from the unit to the ceiling slab beforehand (Refer to Figure 1-2-1).
- ◆ Fix the hanger bracket to the suspension bolt (Refer to Figure 1-2-2).
- ◆ Make sure that extended suspension bolt from the ceiling stays inside the arrowed position. Readjust the hanger bracket when it is outside the arrowed position. (Refer to Figure 1-2-3)
- ◆ Suspension bolt stays inside the cap of indoor unit .Never remove the cap. Lift the unit and slide forward unit the dent. (Refer to Figure 1-2-4)
- ◆ Screw tightly both hanger bracket setting bolts (M8) (Refer to Figure 1-2-2)
- ◆ Screw tightly both hanger bracket fixing bolts (M6) to prevent the movement of the indoor unit. (Refer to Figure 1-2-2)
- ◆ Adjust the height by turning the nut with a spanner. Insert the spanner from the hanger bracket opening. (Refer to Figure 1-2-5)



Hanger bracket Figure 1-2-1

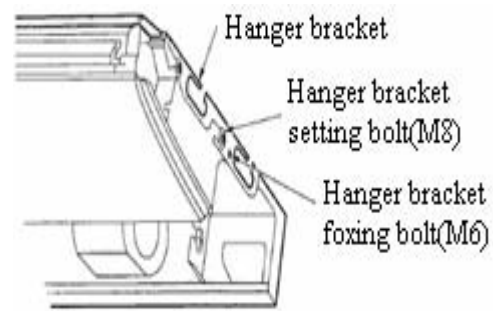


Figure 1-2-2

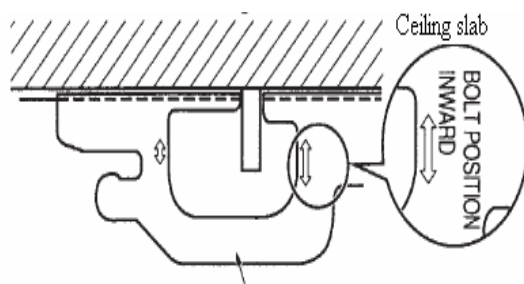


Figure 1-2-3 Hanger bracket

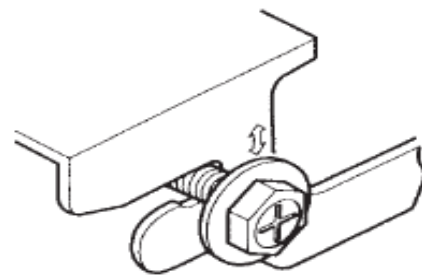


Figure 1-2-4

In case of hanging:

It is possible to install using inward facing hanger bracket by not removing the brackets from the indoor unit. (Refer to Figure 1-2-6) Be sure to use only the specified accessories and parts for installation work.

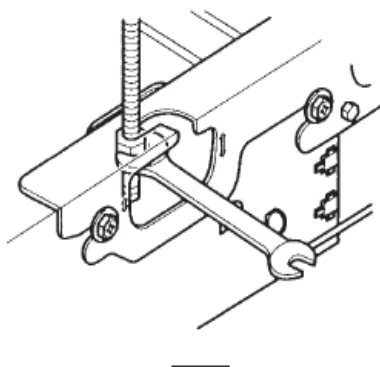


Figure 1-2-5

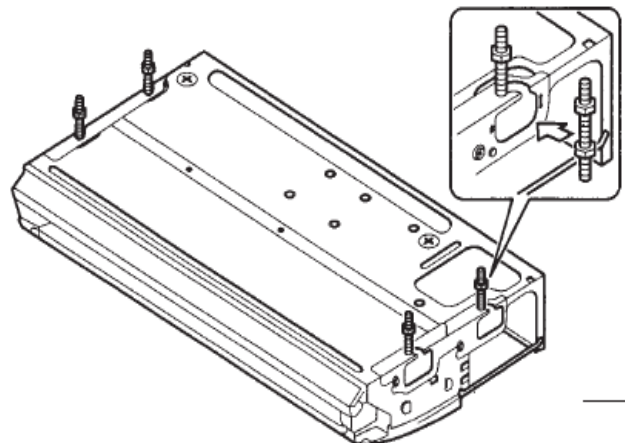


Figure 1-2-6

1.2.4 Dimension Data

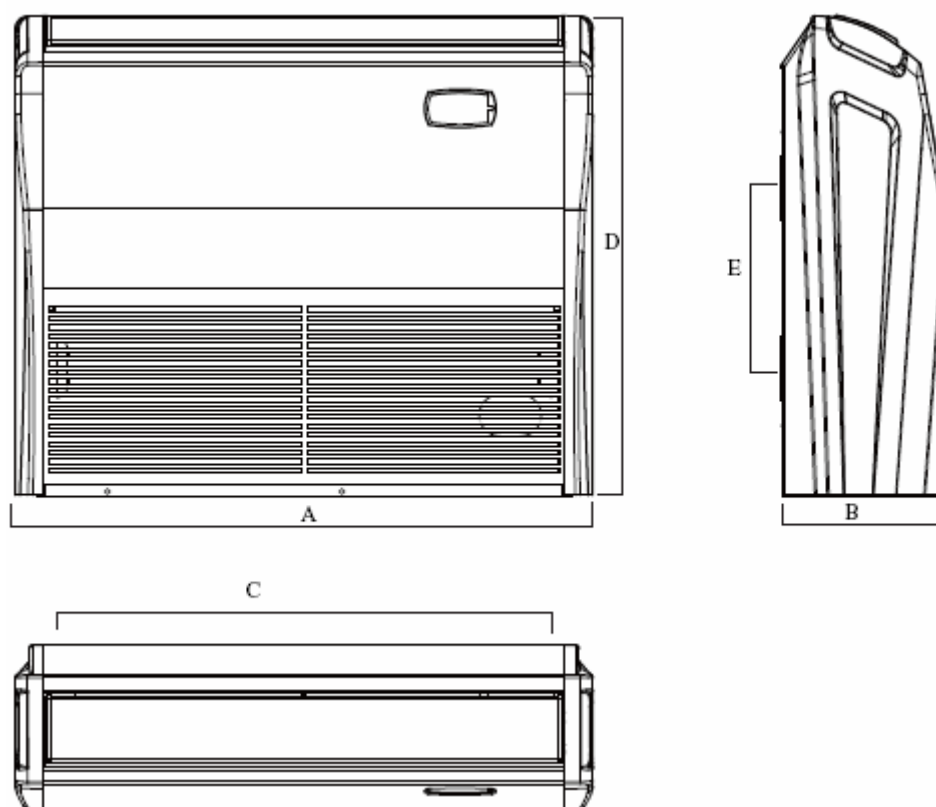


Figure 1-2-7

Unit: mm

Model	A	B	C	D	E
ASFU-09A ASFU-12A ASFU-18A	836	238	745	695	260
ASFU-24A	1300	188	1202	600	260
ASFU-36A ASFU-42A ASFU-48A	1590	238	1491	695	260

1.2.5 Installation Clearance Data

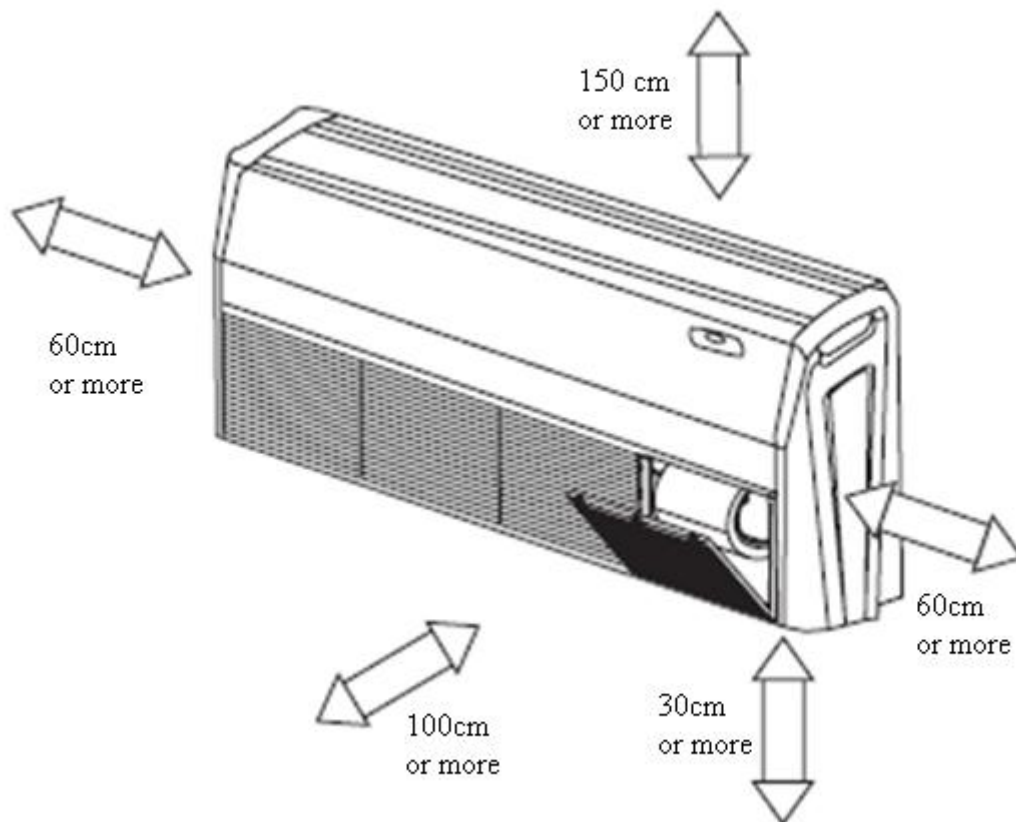


Figure 1-2-8

1.2.6 Drain Piping Work

1) Installation of Drainage Pipeline

- ◆ A Drainage outlet is located at both the left and right sides of the indoor unit. After selecting one Drainage outlet, the other outlet shall be blocked by rubber plug. Bundle the blocked outlet with string to avoid leakage, and also use thermal insulation materials to wrap the blocked outlet.
- ◆ When shipped out from factory, both the Drainage outlets are blocked by rubber plugs.
- ◆ When connecting the drainage pipe with the unit, do not apply excessive force to the pipeline at the side of the unit. The fixing position of the pipeline shall be near the unit.
- ◆ Purchase general-purpose hard PVC pipe locally to be used as the drainage pipeline. When carrying out connection, place the end of the PVC pipeline into the drainage hole. Use flexible drainage tube and tighten it with thread loop. Never use adhesive to connect the drainage hole and the flexible drainage tube. (As shown in Figure 1-2-9)
- ◆ When the laid drainage pipe is used for multiple units, the common pipe shall be about 100mm lower than the drainage outlet of each set of unit. A pipe with thicker wall shall be used for such purpose.

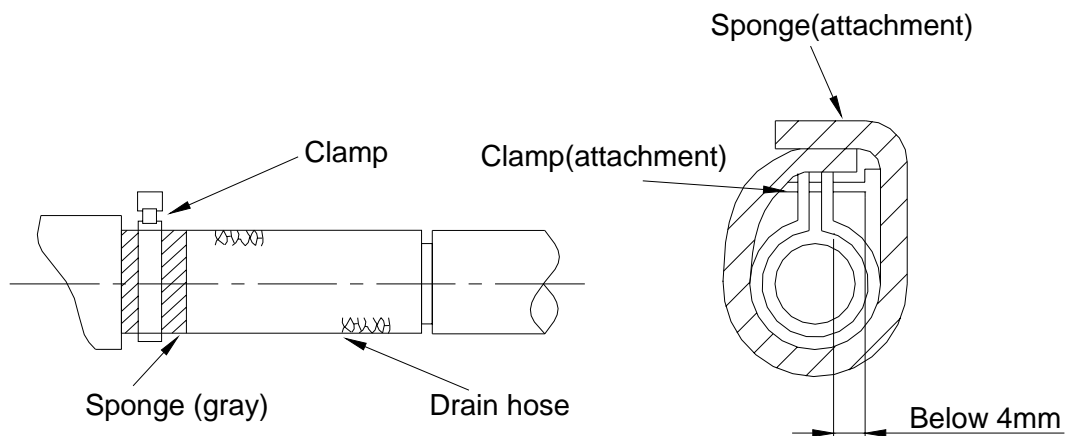


Figure 1-2-9

2) Testing of Drainage System

- ◆ After the electrical installation is completed, carry out the testing of the drainage system.
- ◆ During the test, check if the water correctly flows through the pipelines. Carefully observe the joints to ensure that there is no leakage. If the unit is to be installed in a new house, carry out testing before decorating the ceiling.

3) Matters of Attention

- ◆ The drain pipe outlet direction can be chosen from either the right rear or right.

The diameter of the drain pipe should be equal to or greater than the diameter of the connecting pipe. (Vinyl tube; pipe size: 20mm; outer dimension: 26mm)

Keep the drain pipe short and incline downwards at a gradient of at least 1/100 to prevent air pockets. (Refer to Figure 1-2-10)

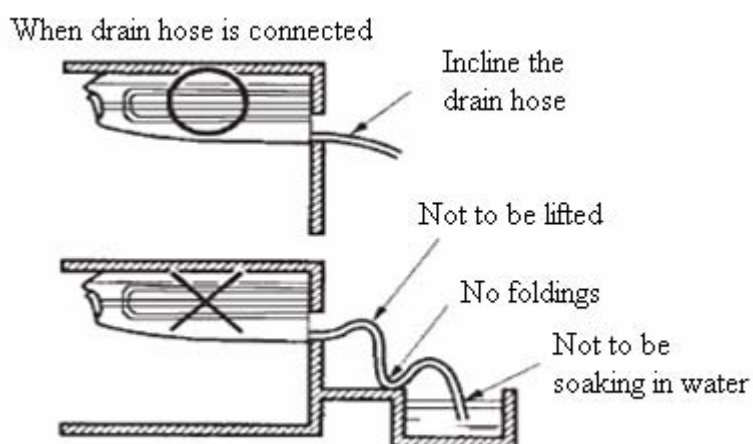


Figure 1-2-10

- ◆ No folding of drain hose inside the indoor unit. (Refer to Figure 1-2-11)
- ◆ Confirm that smooth drainage is achieved after the piping work. Pour 600 cc of water into the drain pan from the air outlet for confirming drainage. (Refer to Figure 1-2-12)

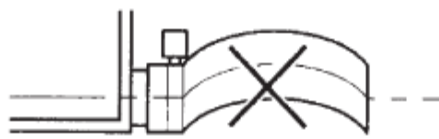


Figure 1-2-11

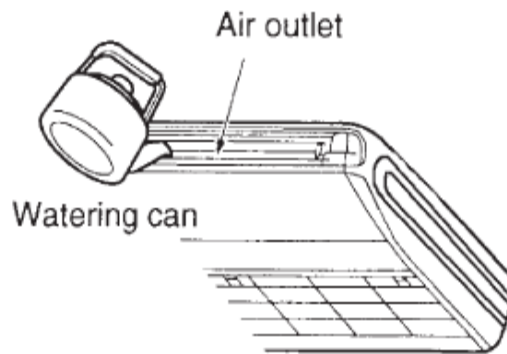


Figure 1-2-12

1.3 Installation of Cassette Type

1.3.1 Before Installation

- ◆ When the unit arrives, please check if any damage due to transport is existent. If any hurt is found on the surface or inside, please declare to the transport company or the manufacturer in writing.
- ◆ Upon receipt of the unit, the unit and accessories shall be checked in accordance with the packing list. Before acceptance, it must be confirmed that the model is correct and the unit is in good shape and specification and quantity of accessories are right.
- ◆ Correct handling route and method shall be decided to prevent damage to the unit. For protecting the unit and ensuring its safety, carrying the unit with its package is recommended. If such carrying method is difficult under particular conditions, the carton shall not be removed to avoid looseness or falling during handling.
- ◆ Confirm the foundation is secure. When the unit is installed on the metal part of a building, electrical insulation must be in compliance with relevant standards.
- ◆ Confirm the installation position is away from storage zone of inflammable and explosive substances, or otherwise leakage of inflammable and explosive substances may lead to explosion or a fire.

1.3.2 Installation Site

- ◆ Obstruct should put away from the intake or outlet vent of the indoor unit so that the airflow can be blown though all the room.
- ◆ Make sure that the installation had accord with the requirement of the schematic diagram of installation spaces.
- ◆ Select the place where can stand 4 times of the weight of the indoor unit and would not increase the operating noise and oscillate.
- ◆ The horizontally of the installation place should be guaranteed.
- ◆ Select the place where is easy to drain out the condensate water, and connect with outdoor unit.
- ◆ Make sure that there are enough space for care and maintenance. Make sure that the weight between the indoor unit and ground is above 2300mm.
- ◆ When installing the steeve bolt, check if the install place can stand the weight 4 times of the unit's. If not, reinforce before installation. (Refer to the install cardboard and find where should be reinforced) The appliance shall not be installed in laundry.

Cautions:

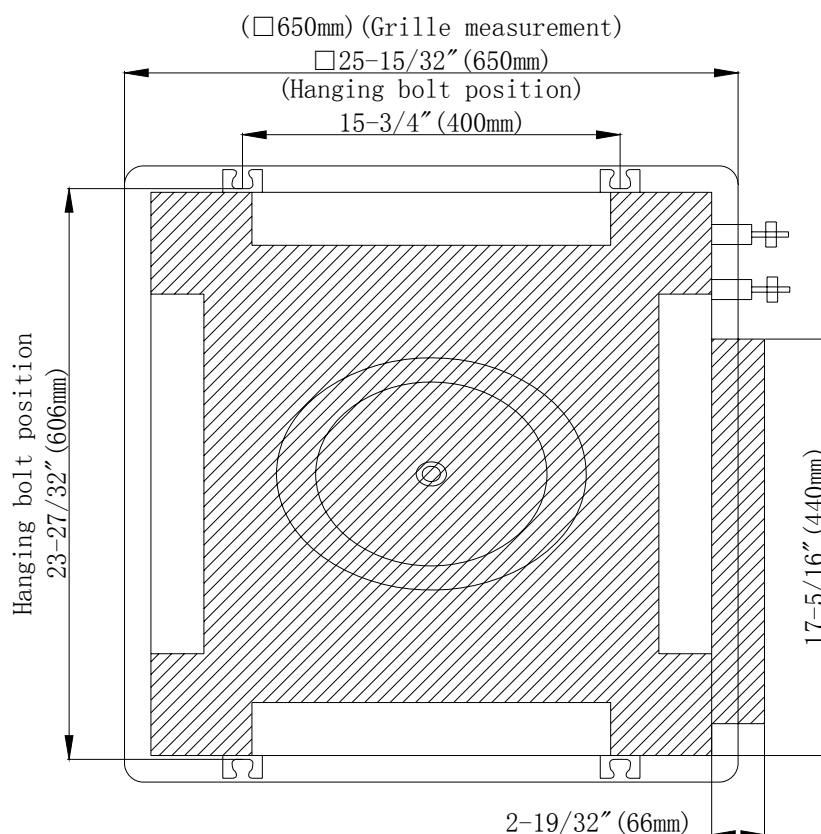
There will be lots of lampblack and dust stick on the acentric, heat exchanger and water pump in dining room and kitchen, which would reduce the capacity of heat exchanger, lead water leakage and abnormal operation of the water pump.

The following treatment should be taken under this circumstance:

- ◆ Ensure that the smoke trap above cooker has enough capacity to obviate lampblack to prevent the indraft of the lampblack by the air conditioner.
- ◆ Keep the air conditioner far from the kitchen so that the lampblack would not be indraft by the air conditioner.

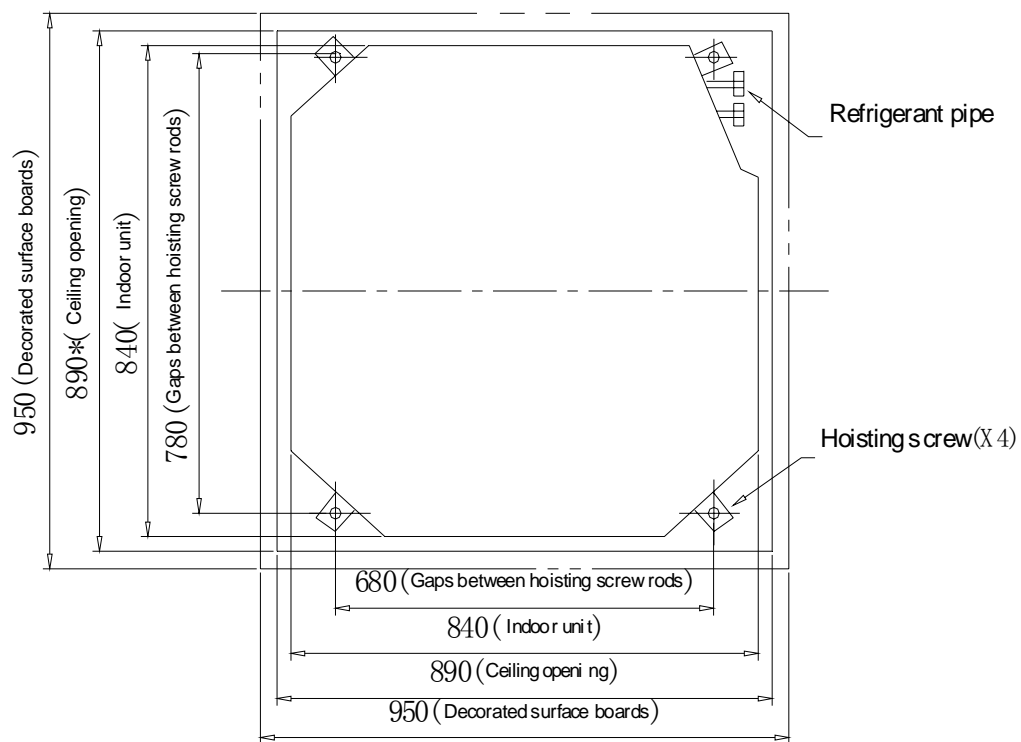
1.3.3 Caution for Installation**1) Important notice:**

- ◆ To guarantee the good performance, the unit must be installed by professional personnel according with this instruction.
- ◆ Please contact the local Gree special nominated repair department before installation. Any malfunction caused by the unit that is installed by the department that is not special nominated by Gree would not deal with on time by the inconvenience of the business contact.

2) Dimension of ceiling opening and location of the hoisting screw (M10)

ASCU-12A, ASCU-18A

Figure 1-3-1



ASCU-24A, ASCU-36A, ASCU-42A, ASCU-48A

Figure 1-3-2

The drilling of holes in the ceiling must be done by the professional personnel.

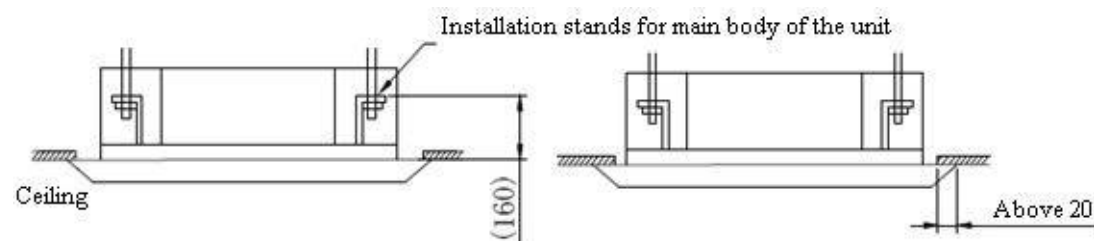


Figure 1-3-3

Cautions:

The dimension for the ceiling openings with * marks can be as large as 910mm. But the overlapping sections of the ceiling and the decorated surface boards should be maintained at no less than 20mm.

3) Main body of hoisting air conditioner

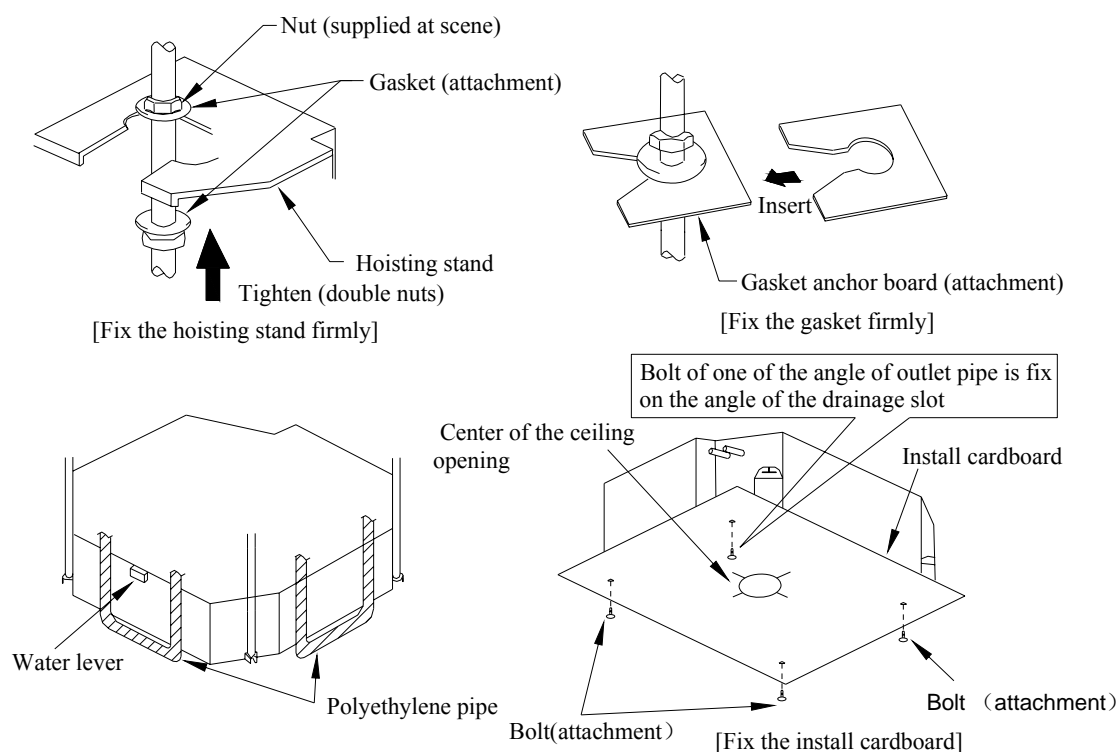


Figure 1-3-4

◆ The primary step for install the indoor unit.

When attach the hoisting stand on hoisting screw, do use nut and gasket individually at the upper and lower of the hoisting stand to fix it. The use of gasket anchor board can prevent gasket break off.

◆ Use install cardboard

Please refer to the install cardboard about the dimension of ceiling opening.

The central mark of the ceiling opening is marked on the install cardboard.

Install the install cardboard on the unit by bolt (3 piece), and fix the angle of the drainage pipe at the outlet vent by bolt.

◆ Adjust the unit to the suitable install place.

◆ Check if the unit is horizontal.

Inner drainage pump and bobber switch are included in the indoor unit, check if 4 angle of every unit are horizontal by water lever. (If the unit is slant toward the opposite of the coagulate water flow, there may be malfunction of the bobber switch and lead water drop.)

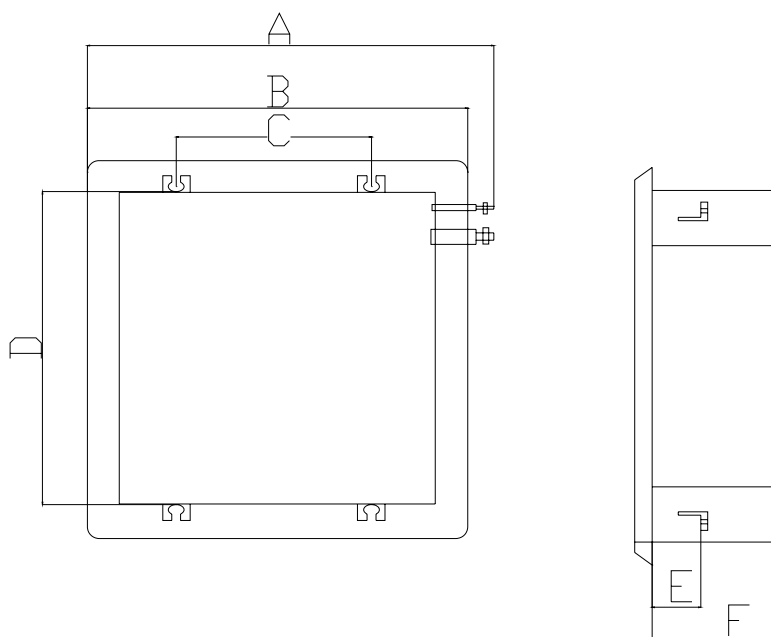
◆ Backout the gasket anchor board used to prevent gasket break off and tighten the nut on it.

◆ Backout the install cardboard.

Cautions:

Please do tighten the nuts and bolts to prevent air conditioner break off.

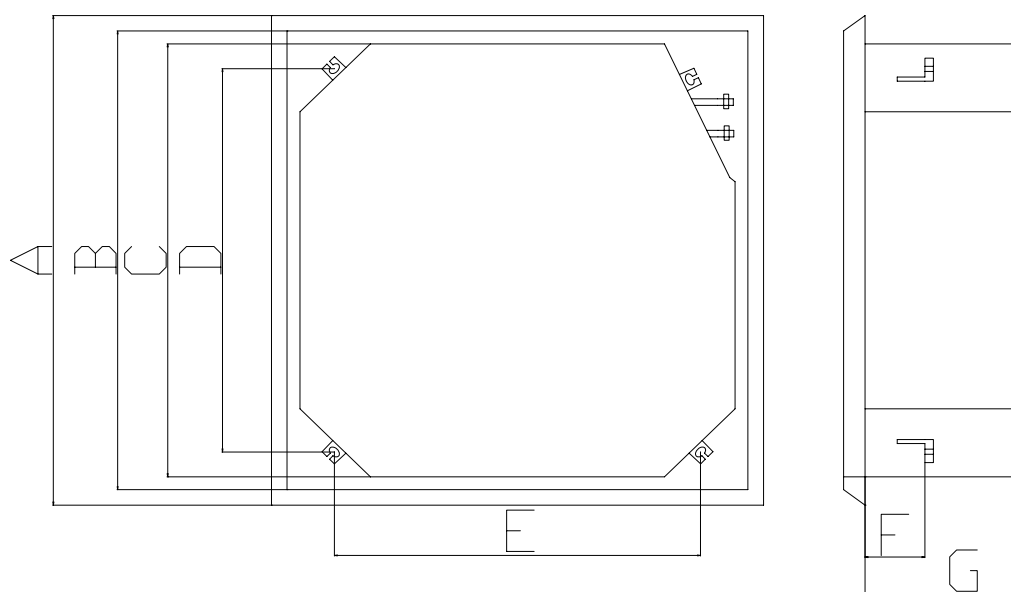
1.3.4 Dimension Data



ASCU-12A, ASCU-18A

Figure 1-3-5-1

Model \ Item	A	B	C	D	E	F
ASCU-12A ASCU-18A	710	650	400	606	160	230



ASCU-24A, ASCU-36A, ASCU-42A, ASCU-48A

Figure 1-3-5-2

Figure 1-3-2

Item Model	A	B	C	D	E	F	G
ASCU-24A	950	890	840	780	680	160	240
ASCU-36A	950	890	840	780	680	160	320
ASCU-42A							
ASCU-48A							

1.3.5 Installation Clearance Data

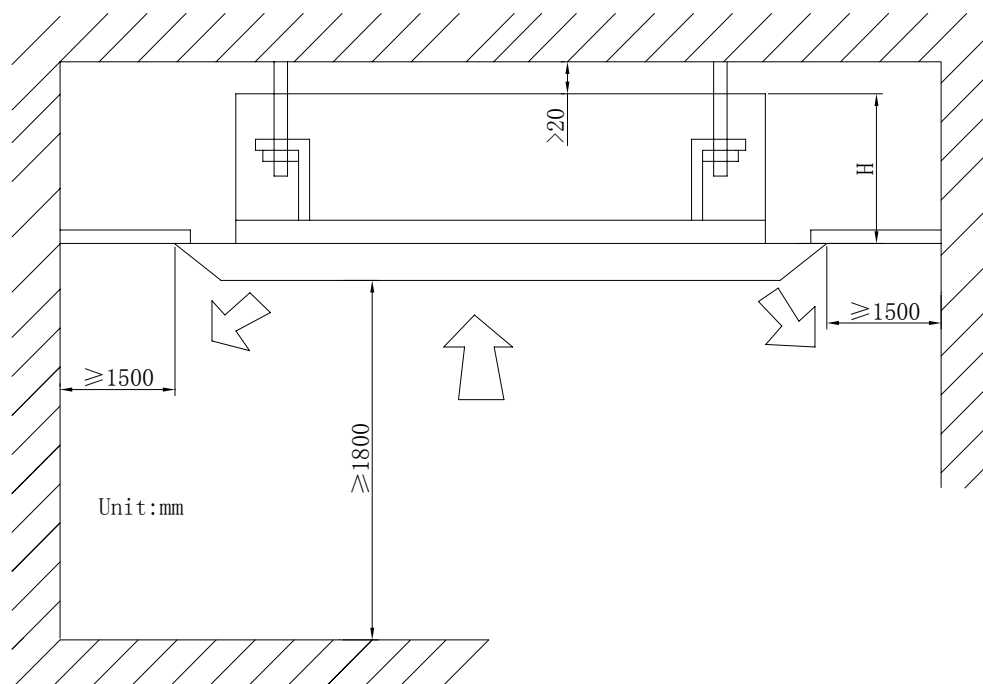


Figure 1-3-6

Models	H(mm)
ASCU-12A ASCU-18A	250
ASCU-24A	260
ASCU-36A ASCU-42A ASCU-48A	340

1.3.6 Drain Piping Work

1) Installation of Drainage Pipeline

- ◆ When connecting the drainage pipe with the unit, do not apply excessive force to the pipeline at the side of the unit. The fixing position of the pipeline shall be near the unit.
- ◆ Purchase general-purpose hard PVC pipe locally to be used as the drainage pipeline. When

carrying out connection, place the end of the PVC pipeline into the drainage hole. Use flexible drainage tube and tighten it with thread loop. Never use adhesive to connect the drainage hole and the flexible drainage tube. (As shown in Figure 1-3-7)

- ◆ When the laid drainage pipe is used for multiple units, the common pipe shall be about 100mm lower than the drainage outlet of each set of unit. A pipe with thicker wall shall be used for such purpose.

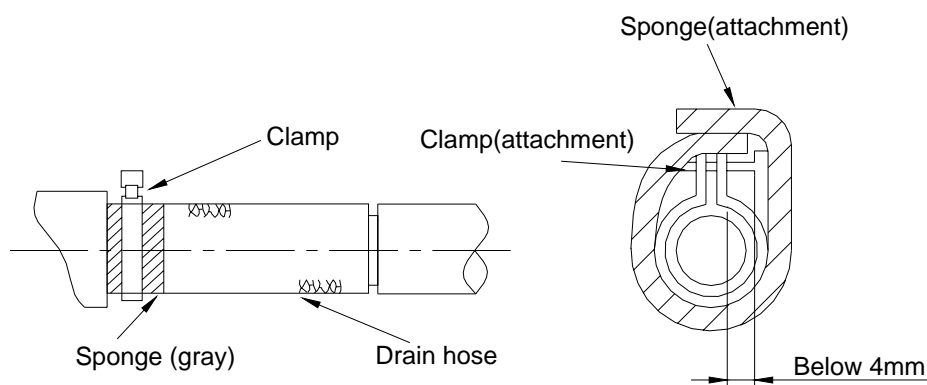


Figure 1-3-7

2) Testing of Drainage System

- ◆ After the electrical installation is completed, carry out the testing of the drainage system.
- ◆ During the test, check if the water correctly flows through the pipelines. Carefully observe the joints to ensure that there is no leakage. If the unit is to be installed in a new house, carry out testing before decorating the ceiling.

3) Matters of Attention

- ◆ The diameter of the drain hose should be equal or bigger than the connection pipe's. (The diameter of polythene pipe: Outer diameter 25mm Surface thickness $\geq 1.5\text{mm}$)
- ◆ Drain hose should be short and drooping gradient should at less 1/100 to prevent the formation of air bubble.
- ◆ If drain hose cannot has enough drooping gradient, drain raising pipe should be added.
- ◆ To prevent bent of the drain hose, the distance between hoisting stand should is 1 to 1.5m. (As shown in Figure 1-3-8)

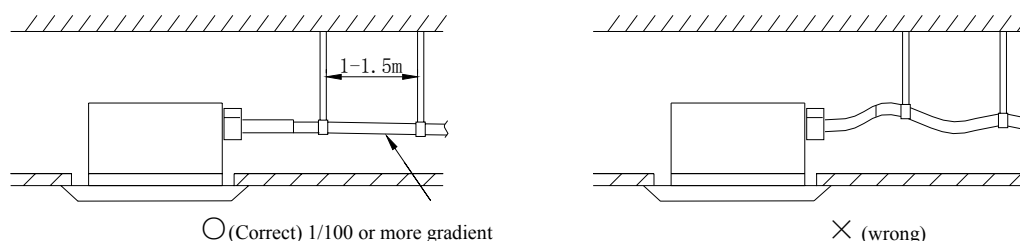


Figure 1-3-8

- ◆ The install height of the drain raising pipe should less than 280mm.
- ◆ The drain raising pipe should form a right angle with the unit, and distance to unit should not

beyond 300mm. (As shown in Figure 1-3-9)

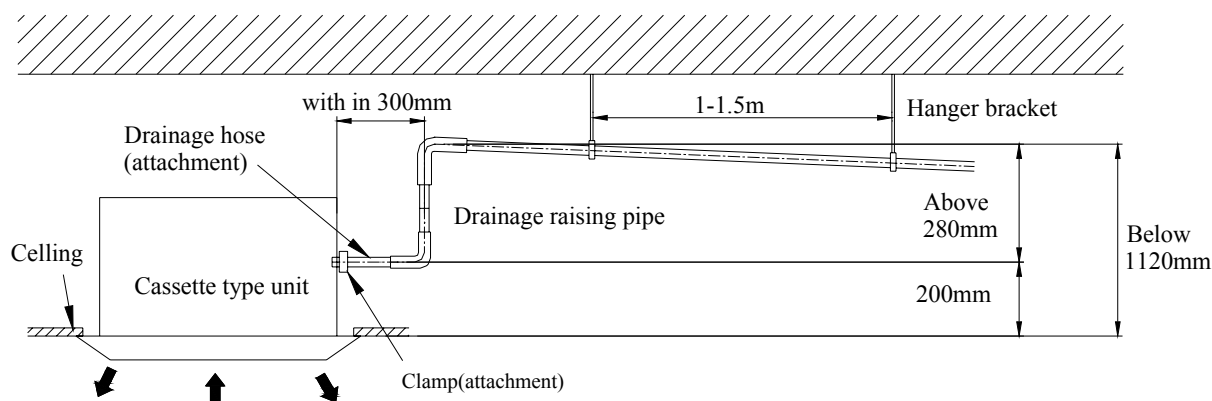


Figure 1-3-9

- ◆ The slant gradient of the attached drain hose should be within 75mm so that the drain hole doesn't have to endure the unnecessary outside force. (As shown in Figure 1-3-10)

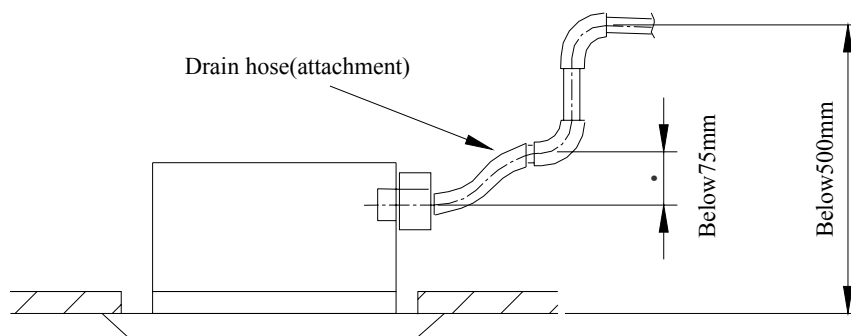
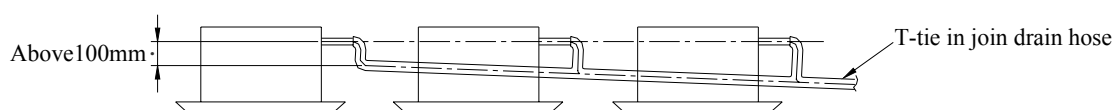


Figure 1-3-10

- ◆ Please install the drain hose according to the following process if several drain hoses join together. (As shown in Figure 1-3-11)



The specs of the selected join drain hose should fit the running capacity of the unit.

Figure 1-3-11

- ◆ Check the smoothness of drain after installation.
- ◆ Check the drain state by immiting 600cc water slowly from the outlet vent or test hole. (As shown in Figure 1-3-12)
- ◆ Check the drain in the state of refrigerating after installation of the electric circuit.

[Way of immiting]

Drain vent for repair use (plastic stopper is included) (drain the water in waterspout by this outlet vent)

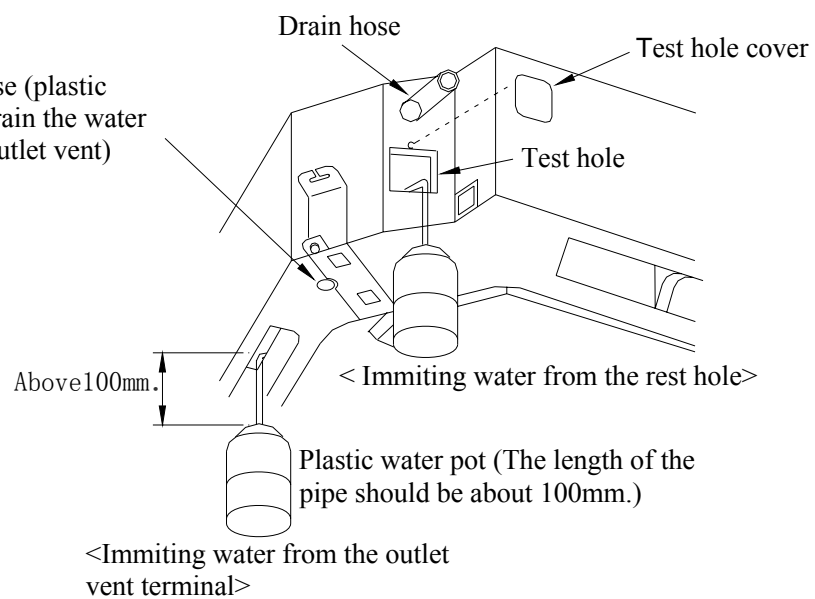


Figure 1-3-12

1.3.7 Installation of panel

- 1) Set the panel to the indoor unit body by matching the position of the swing flap motor of the decoration panel to the piping position of the panel to the piping position of the indoor unit as shown in Figure 1-3-13.

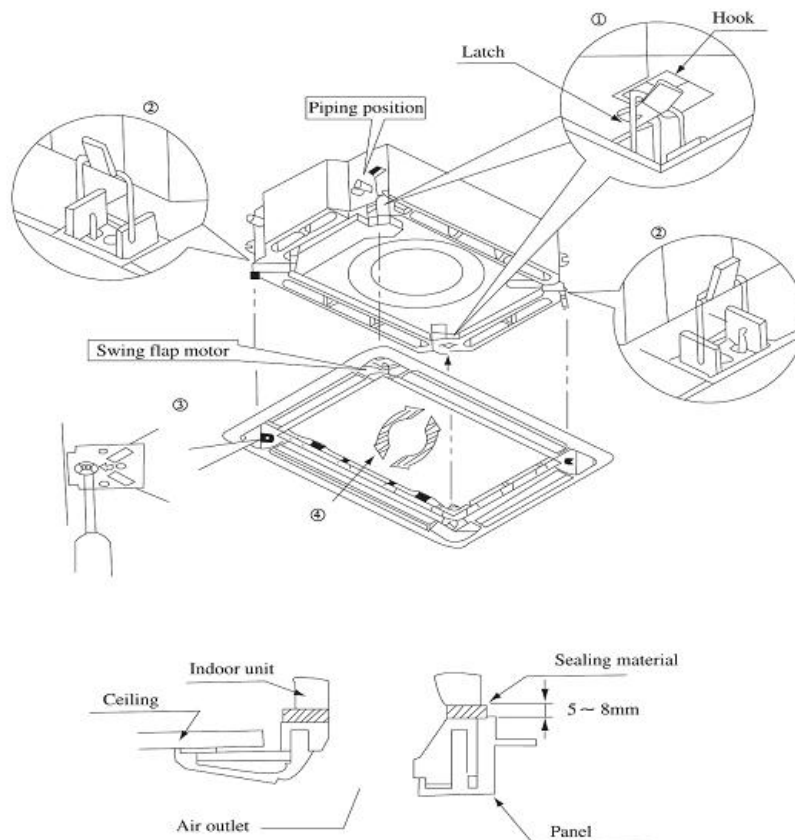


Figure 1-3-13

- ◆ Hang the latch, which is located on the opposite side of the swing flap motor on the panel, temporarily to the hook of the indoor unit. (2 Positions)
- ◆ Temporarily hang the remaining 2 latches to the hooks on the sides of the indoor unit. (Be careful not to let the swing motor lead wire get caught in the sealing material.)
- ◆ Screw all 4 hexagon head screws located right beneath the latches in approximately 15mm. (Panel will rise)
- ◆ Adjust the panel by turning it to the arrowed direction in Fig.4 so that the ceiling opening is completely covered.
- ◆ Tighten the screws until the thickness of the sealing material between the panel and the indoor unit body is reduced to 5~8 mm.

2) Precautions:

- ◆ Improper screwing of the screws may cause the troubles shown in Figure 1-3-14.

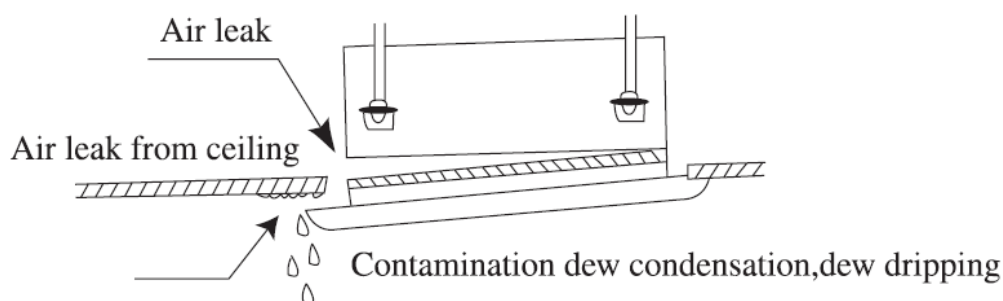


Figure 1-3-14

- ◆ If gap is still left between the ceiling and the panel after screwing the screws, readjust the height of the indoor unit body (Refer to Figure 1-3-15)

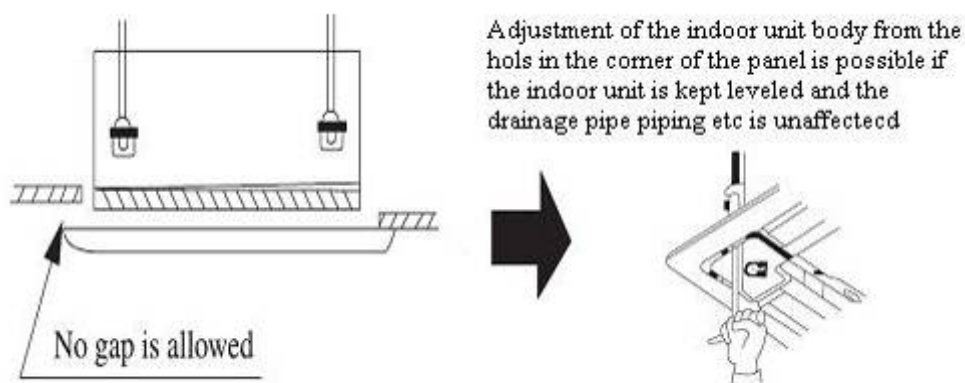


Figure 1-3-15

- ◆ After fixing be sure no gap left between the ceiling and the panel

3) Wiring of the decoration panel.

- ◆ Connect the joints for swing flap motor lead wire (at 2 places) installed on the panel (Refer to Figure 1-3-16)

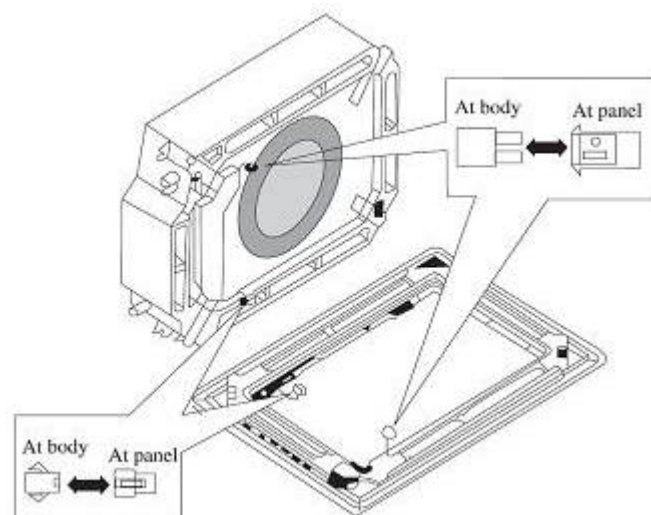


Figure 1-3-16

2 OUTDOOR UNIT INSTALLATION

2.1 Before Installation

- ◆ When the unit arrives, please check if any damage due to transport is existent. If any hurt is found on the surface or inside, please declare to the transport company or the manufacturer in writing.
- ◆ Upon receipt of the unit, the unit and accessories shall be checked in accordance with the packing list. Before acceptance, it must be confirmed that the model is correct and the unit is in good shape and specification and quantity of accessories are right.
- ◆ Correct handling route and method shall be decided to prevent damage to the unit. For protecting the unit and ensuring its safety, carrying the unit with its package is recommended. If such carrying method is difficult under particular conditions, the canton shall not be removed to avoid looseness or falling during handling.
- ◆ Confirm the foundation is secure. When the unit is installed on the metal part of a building, electrical insulation must be in compliance with relevant standards.
- ◆ Confirm the installation position is away from storage zone of inflammable and explosive substances, or otherwise leakage of inflammable and explosive substances may lead to explosion or a fire.

2.2 Installation Site

- ◆ To ensure the unit in proper function, selection of installation location must be in accordance with following principles:
- ◆ Outdoor unit shall be installed so that the air discharged by outdoor unit will not return and that sufficient space for repair shall be provided around the unit.
- ◆ The installation site must have good ventilation, so that the outdoor unit can take in and exhaust enough air. Ensure that there is no obstacle for the air intake and exhaust of the outdoor unit. If there is any obstacle blocking the air intake or exhaust, remove it.
- ◆ Place of installation shall be strong enough to support the weight of outdoor unit, and it shall be able to insulate noise and prevent vibration. Ensure that the wind and noise from the unit will not affect your neighbors.
- ◆ Avoid direct sunshine over the unit. It is better to set up a sun shield as the protection.

- ◆ Place of installation must be able to drain the rainwater and defrosting water.
- ◆ Place of installation must ensure the unit will not be buried under snow or subject to the influence of rubbish or oil fog.
- ◆ The installation site must be at a place where the air exhaust outlet does not face strong wind.
- ◆ Outdoor unit should be hoisted through indicated hoisting holes. During hoisting, special attention must be paid to the unit to prevent collision into its sheet metal parts to avoid rust.
- ◆ Rubber cushion or spring shock absorber shall be used for outdoor unit to avoid excessive noise and vibration.
- ◆ Rubber cushion or spring shock absorber shall be used for outdoor unit to avoid excessive noise and vibration.
- ◆ Only professional personnel are allowed for unit installation.

2.3 Caution for Installation

- ◆ Installation of outdoor unit shall not allow discharged air to return, and sufficient maintenance space shall be left around the unit.
- ◆ Installation position must be well-ventilated, enabling the unit to absorb and discharge enough air. Inlet and outlet must be free of obstruction. Any obstacle blocking air going in and out must be removed.
- ◆ When outdoor unit is mounted on the secure floor such as concrete, bolts and nuts in M10 can be used for fixing the unit. Uprightness or levelness of the unit must be ensured.
- ◆ Outdoor unit should be hoisted through indicated hoisting holes. During hoisting, special attention must be paid to the unit to prevent collision into its sheet metal parts to avoid rust.
- ◆ Rubber cushion or spring shock absorber shall be used for outdoor unit to avoid excessive noise and vibration. Uprightness or levelness must be ensured.
- ◆ In installation of drain pipe, the connector of the drain pipe shall be inserted into a drain hole on the chassis of the outdoor unit. And then a drain pipe shall be connected to the drain connector. (If the drain connector is used, installing height of the outdoor unit shall be at least 5cm).
- ◆ If pipe is put through wall, a wall pipe must be used.
- ◆ Installation dimension must be in line with requirements by the instructions. Outdoor unit must be fixed on the mounting position.
- ◆ Only professional personnel are allowed for unit installation

2.4 Dimension Data

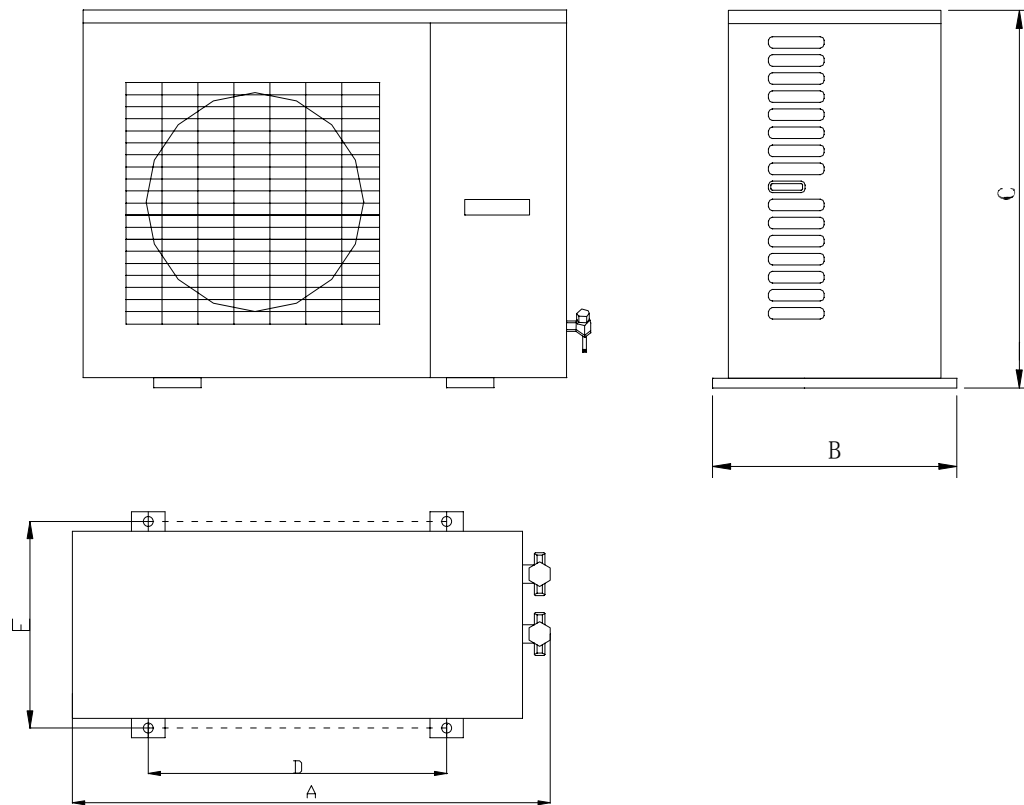


Figure 2-4-1

Unit: mm

Model	A	B	C	D	E
ASGE-09A	820	320	540	540	286
ASGE-12A					
ASGE-18A					
ASGE-24A	1018	412	695	572	378
ASGE-36A	1018	412	840	572	378
ASGE-42A	1032	412	1250	572	378
ASGE-48A					
ASGE-60A					

2.5 Installation Clearance Data

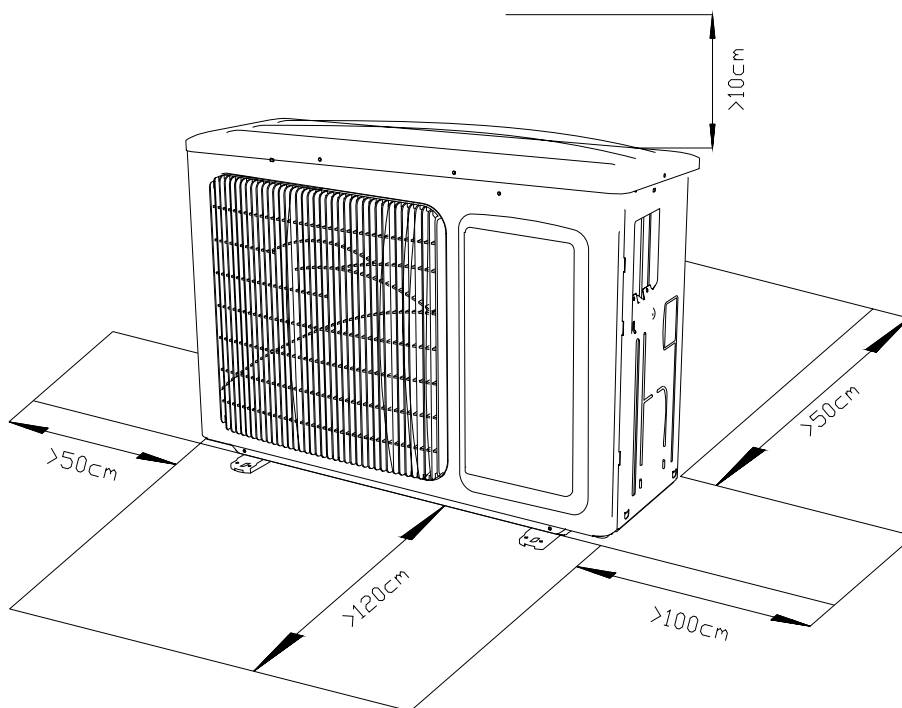


Figure 2-5-1

3 REFRIGERATION PIPING WORK

3.1 Refrigeration Piping Work Procedures

1) Connecting pipelines

- ◆ Connection pipes must be in accordance with the following requirements: the basic principle --- keeping dry, clean and no leakage inside.

The 3 principles of refrigerant piping		
Dry	Clean	Air tight
Make sure there is no moisture inside the pipes	Make sure there is no dirt inside the pipe	Make sure the refrigerant does not leak out
 (V0965)	 (V1148)	 (V1149)

Figure 3-1-1

- ◆ Align copper pipe flare with the center of screwed connector and tighten fully the nut of the flare by hand.

- ◆ Tighten the flare nut with a torque spanner until the torque spanner makes a click, as shown in Figure 3-1-1. Moment needed for tightening a nut is shown in Tab. 3-1-1.

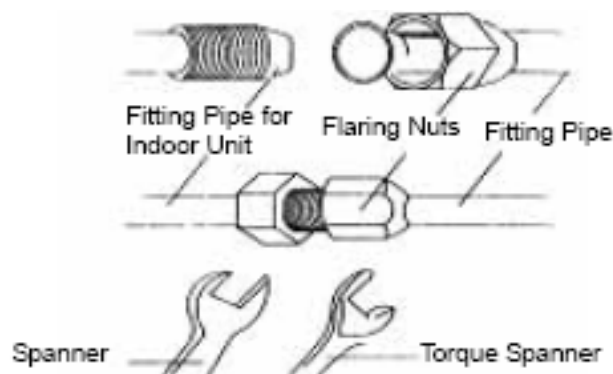


Figure 3-1-2

Form 3-1-1 the tightening torque needed for tightening nut

Pipe diameter	Tightening torque
1/4 "	15-30 (N·m)
3/8 "	35-40 (N·m)
5/8 "	60-65 (N·m)
1/2 "	45-50 (N·m)
3/4 "	70-75 N·m)

- ◆ Curvature of piping shall not be too small, or otherwise piping may be broken. So installation personnel should use a pipe bender to bend pipes.
- ◆ Upward or longitudinal welding joint method is usually applied to the welding of pipelines. The welding method that mouth of pipe is downward (face-down welding) should be avoided as far as possible, because such method is prone to welding defects and even would cause leakage, as shown in Figure 3-1-3.

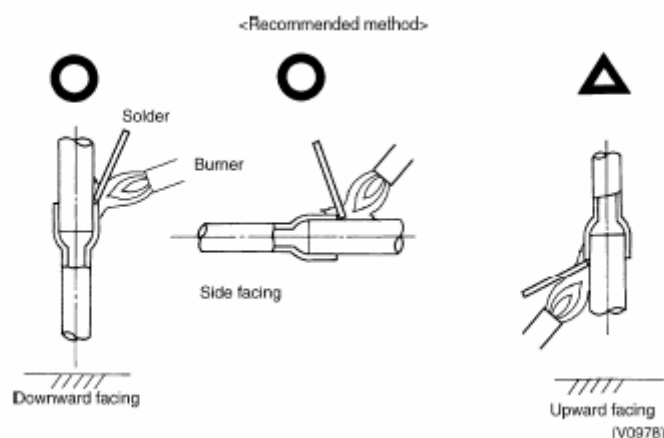


Figure 3-1-3

- ◆ Uninsulated connecting pipes and connectors should be packed with sponge and tied with plastic adhesive tapes.

2) Vacuum-pumping and leak detection

- ◆ Dismantle the bonnet of refrigerant valve and air valve.
- ◆ Align with the center of piping and adequately tighten nuts of connecting pipes by hand
- ◆ Tighten the nuts with a spanner.
- ◆ Remove the one way valve cap of air valve.
- ◆ Unscrew the spool of refrigerant valve for 1/4 turn with a socket head wrench, and at the same time push up the spool of air valve with a screwdriver to let air give off.
- ◆ Air exhaust continues for 15 seconds until coolant gas appears, immediately shut off one way valve and tighten the valve cap.
- ◆ Totally open the spool of refrigerant valve and air valve (as shown in Figure 3-1-4)

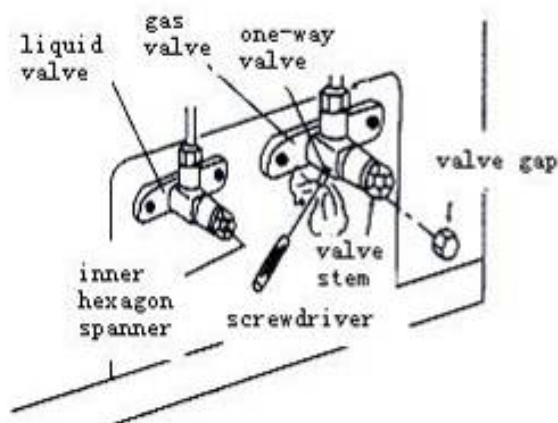


Figure 3-1-4

- ◆ Tighten the valve caps and use soapy water or a leak detector to check any leakage on indoor unit, outdoor unit and connection parts of pipes.

Caution:

If conditions are allowed, a vacuum pump shall be used for drawing off air inside the system at a valve. Method for creation of vacuum by using a vacuum pump is as follows:

- ◆ Take out the nut cover of the inlet for refrigerant.
- ◆ Connect the tube of the vacuum watch with the vacuum pump, having the low-pressure end linking to the inlet for refrigerant. (As shown in Figure 3-1-5)

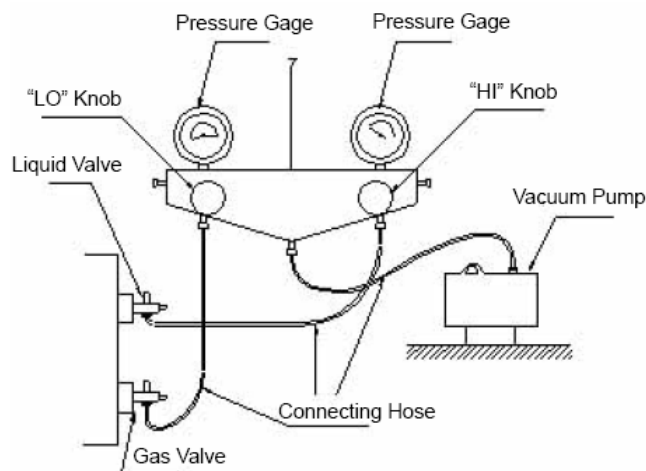


Figure 3-1-5

- ◆ Starting the vacuum pump, when the indicator turns to -1 bar, closing the low pressure handle and stopping vacuumize. Keep for 15 minutes, ensuring the pressure of the vacuum watch remains.
- ◆ Take out the valve cover of the gas valve together with the liquid valve.
- ◆ Loosening the cord of liquid valve until the pressure rise to 0 bar.
- ◆ Dismantle the tube from the cover of the inlet for refrigerant then, tighten the cover.
- ◆ Loose the valve cord of the gas valve as well as the liquid valve entirely.
- ◆ Tighten the valve cover of the gas valve and liquid valve so as to check whether leakage occurred.

3) Installation of Protective Layer of Connecting Pipe

- ◆ To avoid generation of condensate on the connecting pipe and avoid leakage, the big pipe and the small pipe of the connecting pipe must be covered by thermal insulation materials, be bundled by adhesive tape, and be isolated from air.
- ◆ The joint connecting to the indoor unit must be wrapped by thermal insulation material. There shall be no gap between the connecting pipe joint and the wall of the indoor unit. Refer to Figure 3-1-6.

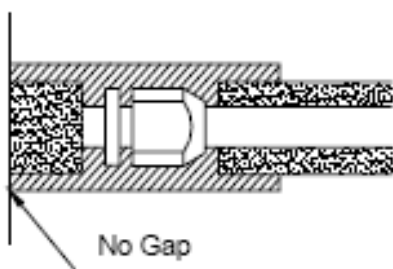


Figure 3-1-6

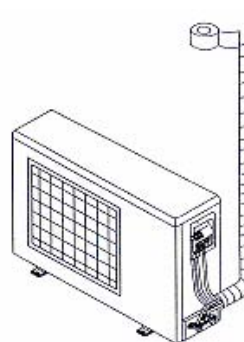


Figure 3-1-7

- ◆ Use adhesive tape to bundle the connecting pipe and the cables together. To prevent condensate from overflowing out from the drainage pipe, separate the drainage pipe from the connecting pipe and the cables.
- ◆ Use thermal insulation tape to wrap the pipes from the bottom of the outdoor unit until the upper end of the pipe where the pipe enters the wall. When wrapping thermal insulation tape, the later circle of tape must cover half of the front circle of tape (Figure 3-1-7).
- ◆ Wrapped pipe must be fixed to wall using pipe clamps.

Caution:

- ◆ After the pipes are wrapped by protective materials, never bend the pipes to form very small angle, and otherwise the pipes may crack or break.
- ◆ Do not wrap the protective tape too tight, otherwise the efficiency of thermal insulation may be decreased. Ensure that the condensate drainage flexible tube is separate from the bundled pipes.
- ◆ After the protective work is completed and the pipes are wrapped, use seal material to block the hole in the wall, so as to prevent rain and wind from entering the room.

3.2 Caution in Connecting Pipes

Arrangement of connecting pipes shall be performed according to sit conditions with reference to the following principles.

- ◆ Try to shorten the length of connecting pipes, within 5m for the better.
- ◆ Try to reduce height difference between indoor unit and outdoor unit.
- ◆ Try to reduce number of joint bends of connecting pipes.
- ◆ If the length of connecting pipes is more than 20m, adequacy of lubricant of the system must be checked; and if necessary, add more lubricant properly.
- ◆ **Filling amount of refrigerant in the system is matched to a 7m connecting pipe.** If the connecting pipe is needed to lengthen, appropriate amount of refrigerant should be added. How much refrigerant should be added for every meter extension refers to the following table. Allowable maximum pipe length is 30m.
- ◆ If height difference between indoor unit and outdoor unit exceeds 10m in installation of air conditioner, an oil return bend must be mounted at an interval of 6m.
- ◆ If heights of indoor unit and outdoor unit are different, pipes should be laid out with reference to Figure 3-2-1.

———— Refrigerant pipe (thin)

- - - - - Air pipe (large)

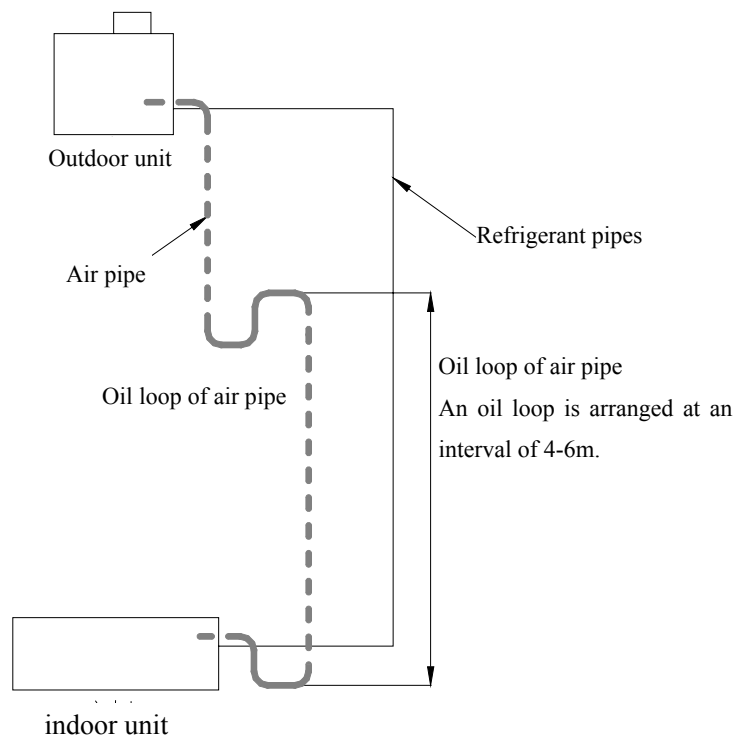


Figure 3-2-1

3.3 Specification of Connection Pipe

Model	External Diameter		Maximum Length of Connection Pipe	Maximum Difference in Height between Outdoor and Indoor Unit	Additional Charge of Refrigerant
	Gas Pipe	Liquid Pipe			
				(m)	(m)
ASGE-09A	φ3/8 "	φ1/4 "	20	15	15
ASGE-12A	φ1/2 "				
ASGE-18A					
ASGE-24A	φ5/8 "	φ3/8 "	30	15	60
ASGE-36A	φ3/4 "	φ1/2 "	50	30	120
ASGE-42A					
ASGE-48A					
ASGE-60A					

4 ELECTRIC WIRING WORK

4.1 Wiring Principle

4.1.1 General

- ◆ Perform wiring of the power supply in conformance with the regulations of the local electric company.
- ◆ For the control wires connecting indoor units, and between indoor and outdoor units, use of double-core shield wires is recommended to prevent noise trouble.
- ◆ Be sure to set the earth leakage breaker and the switches to the power supply section of the indoor unit.
- ◆ Supply power to each outdoor unit and provide an earth leakage breaker or hand switch for each outdoor unit.
- ◆ Store wiring system for control and refrigerant piping system in the same line.
- ◆ Arrange the cables so that the electric wires do not come to contact with high-temperature part of the refrigerant pipe; otherwise coating melts and an accident may be caused.
- ◆ Do not turn on power of the indoor unit until vacuuming of the refrigerant pipe will finish.
- ◆ Installation should be conducted by National Wiring Regulation.
- ◆ The rated voltage and exclusive power supply must be adopted for the air conditioners.
- ◆ The power cable should be reliable and fixed, in order to avoid the wiring terminal be suffered from force. And do not drag the power cable forcibly.
- ◆ The wire diameter of power cable should be large enough, if power cable and connection wire be damaged, it should be replaced by the exclusive cable.
- ◆ All electric installation must be done by professional personnel according to local law, regulation and this manual.
- ◆ It should be reliably earthed, and it should be connected to the special earth device, the installation work should be operated by the professional.
- ◆ The creepage protect switch and air switch must be installed.
- ◆ Air switch should have the thermal dropout and magnetic dropout function, in order to avoid the short circuit and overload.
- ◆ The on spot connection should refer to the circuit diagram, which is stuck on the unit body.
- ◆ The unit should be reliably earth, if it is improperly earthed that may cause electric shock or fire.
- ◆ Air conditioner is the “I” class electric appliance, thus please do conduct reliable grounding measure.
- ◆ The yellow-green two-color wiring of air conditioner is grounding wire and cannot be used for other purposes. It cannot be cut off and be fixed by screw, otherwise it would cause electric shock.
- ◆ The user must offer the reliable grounding terminal. Please don't connect the grounding wire to the following places:

- ① Water pipe;
- ② Gas pipe;
- ③ Blowing pipe;
- ④ Other places that professional personnel consider them unreliable.

4.1.2 Connection of electric wires with the terminal

1) Caution

Before installing the electrical equipment, please pay attention to the following matters which have been specially pointed out by our designers:

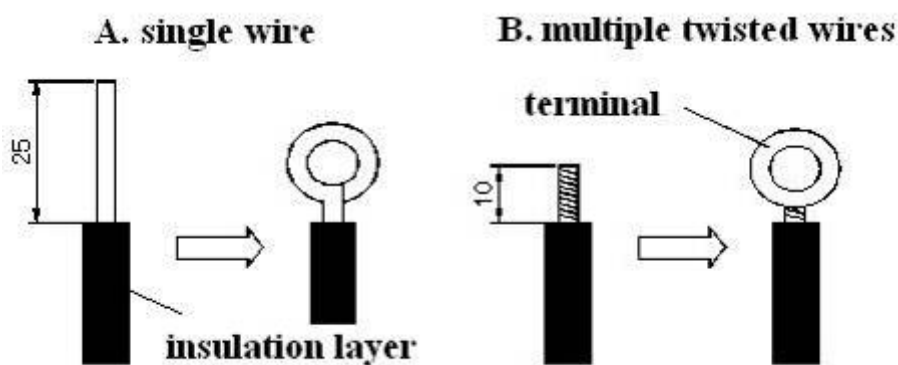
- ① Check to see if the power supply used conforms to the rated power supply specified on the nameplate.
- ② The capacity of the power supply must be large enough. The section area of fitting line in the room shall be larger than 2.5mm².
- ③ The lines must be installed by professional personnel.
- ④ An electricity leakage protection switch and an air switch with gap between electrode heads larger than 3 mm shall be installed in the fixed line.

2) Connection of single wire

- ① Use wire stripper to strip the insulation layer (25mm long) from the end of the single wire.
- ② Remove the screw at the terminal board of the air-conditioning unit.
- ③ User pliers to bend the end of the single wire so that a loop matching the screw size is formed.
- ④ Put the screw through the loop of the single wire and fix the loop at the terminal board.

3) Connection of multiple twisted wires

- ① Use wire stripper to strip the insulation layer (10mm long) from the end of the multiple twisted wires.
- ② Remove the screw at the terminal board of the air-conditioning unit.
- ③ Use crimping pliers to connect a terminal (matching the size of the screw) at the end of the multiple twisted wires.
- ④ Put the screw through the terminal of the multiple twisted wires and fix the terminal at the terminal board.



Warning:

- ◆ If the power supply flexible line or the signal line of the equipment is damaged, only use special flexible line to replace it.
- ◆ Before connecting lines, read the voltages of the relevant parts on the nameplate. Then carry out line connection according to the schematic diagram.

- ◆ The air-conditioning unit shall have special power supply line which shall be equipped with electricity leakage switch and air switch, so as to deal with overload conditions.
- ◆ The air-conditioning unit must have grounding to avoid hazard owing to insulation failure.
- ◆ All fitting lines must use crimp terminals or single wire. If multiple twisted wires are connected to terminal board, arc may arise.
- ◆ All line connections must conform to the schematic diagram of lines. Wrong connection may cause abnormal operation or damage of the air-conditioning unit.
- ◆ Do not let any cable contact the refrigerant pipe, the compressor and moving parts such as fan.
- ◆ Do not change the internal line connections inside the air-conditioning unit. The manufacturer shall not be liable for any loss or abnormal operation arising from wrong line connections.

4.1.3 Power Cable Connection

1) Air-conditioning unit with single-phase power supply

- ① Remove the front-side panel of the outdoor unit.
- ② Pass the cable through rubber ring.
- ③ Connect the power supply cable to the “L, N” terminals and the grounding screw.
- ④ Use cable fastener to bundle and fix the cable.

2) Air-conditioning unit with 3-phase power supply

- ① Remove the front-side panel of the outdoor unit.
- ② Attach rubber ring to the cable-cross hole of the outdoor unit.
- ③ Pass the cable through rubber ring.
- ④ Connect the power cable to the terminal and earthing screws marked “L1, L2, L3 & N”.
- ⑤ Use cable fastener to bundle and fix the cable.

Caution:

- ◆ For air-conditioner with auxiliary heater, it is required to connect the power cable to the “L1, L2 L3” terminals and the grounding screw.

4.1.4 Connection of Signal Line of Wire Controller

Caution:

Take great care when carrying out the following connections, so as to avoid malfunction of the air-conditioning unit because of electromagnetic interference.

- ◆ The signal line of the wire controller must be separated from the power line and the connecting line between the indoor unit and the outdoor unit.
- ◆ ◆ In case the unit is installed in a place vulnerable by electromagnetic interference, it is better to use shielded cable or double-twisted cable as the signal line of the wire controller.
- ◆ Open the cover of the electric box of the indoor unit.
- ◆ Pull the signal cable of the wire controller through the rubber ring.

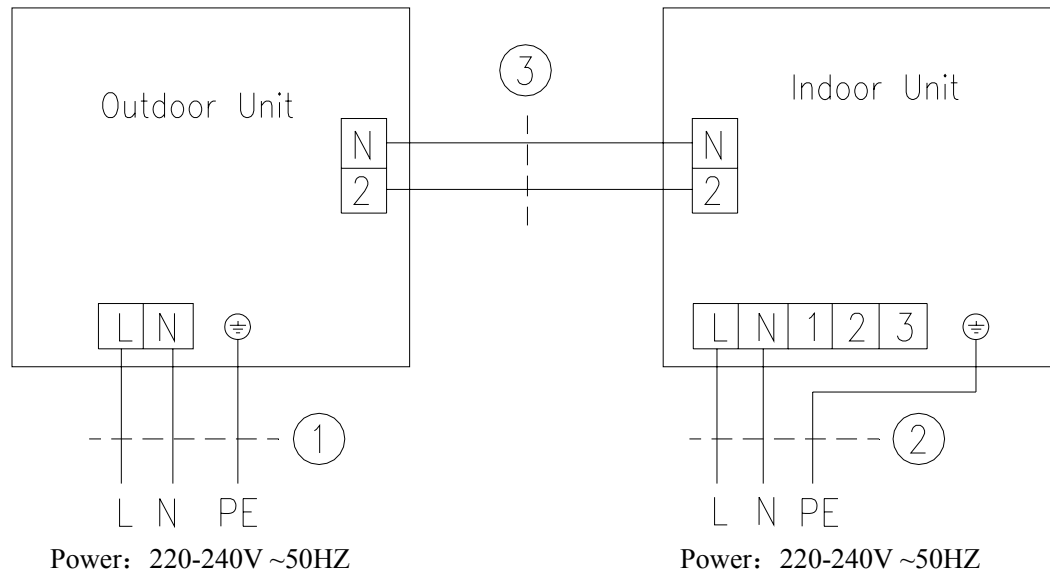
- ◆ Plug the signal line of the wire controller onto the 4-bit pin socket at the circuit board of the indoor unit.
- ◆ Use cable fastener to bundle and fix the signal cable of the wire controller.

4.1.5 Connection of wires

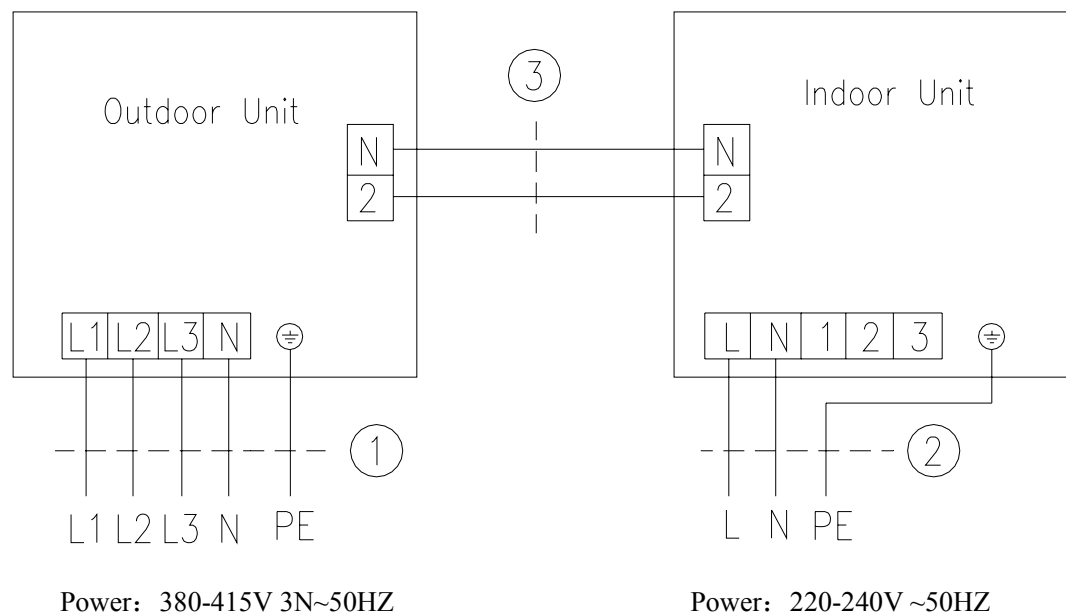
- ① Remove the board on the right side of outdoor unit and put through the wire running hole on the outdoor unit and put on a rubber ring.
- ② Remove wire holders and connect the power cord to the terminal and fix it.
- ③ Secure the power connecting cord and signal control cable with wire holders and then connect corresponding adapters.
- ④ Check if wires are fixed properly.
- ⑤ Fit on the front side board.

4.2 Electric Wiring Design

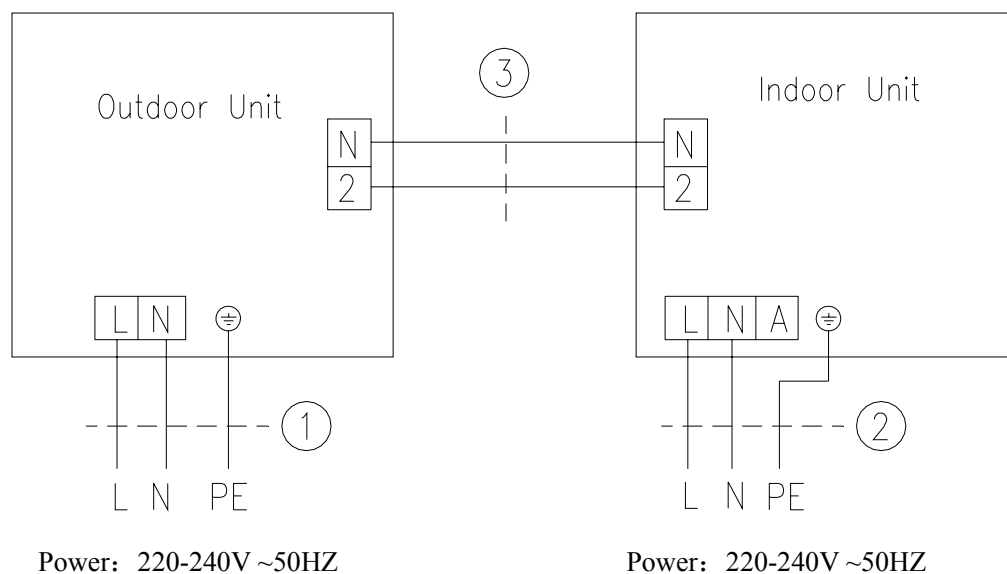
4.2.1 ASGE-09A WK+ASDU-09A, ASGE-12A WK+ASDU-12A, ASGE-18A WK+ASDU-18A, ASGE-24A WK+ASDU-24A,



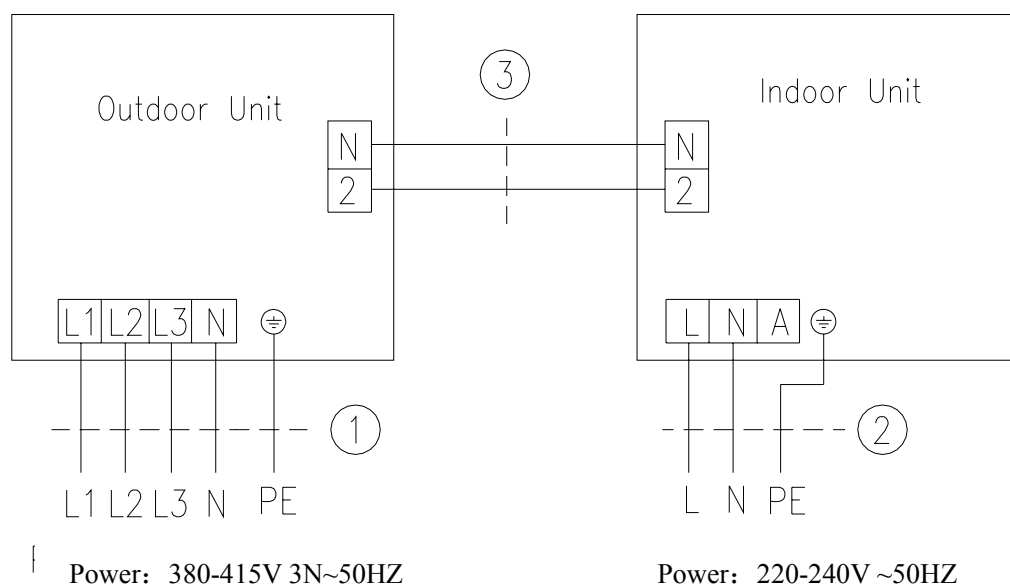
ASGE-36A WK+ASDU-36A, ASGE-42A WK+ASDU-42A, ASGE-48A WK+ASDU-48A, ASGE-60A WK+ASDU-60A



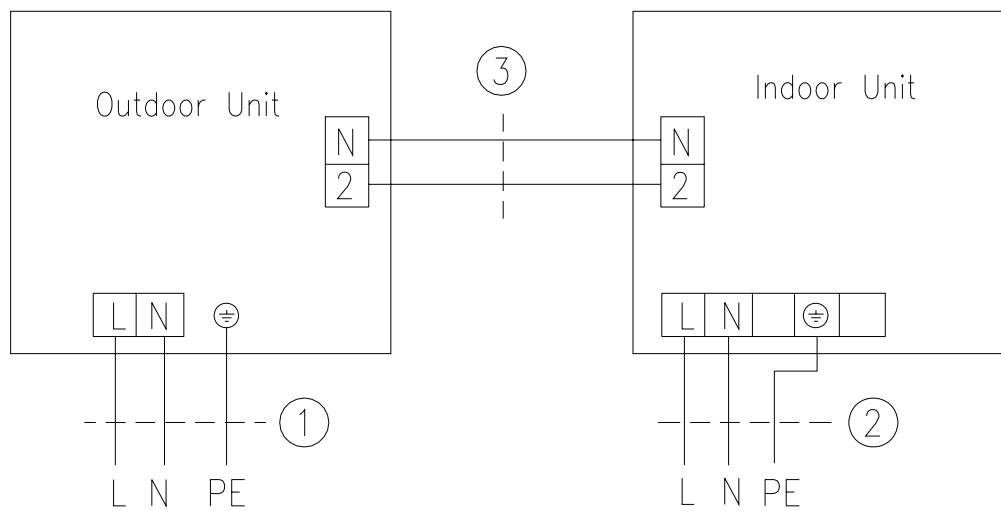
4.2.2 ASGE-09A WK+ASFU-09A, ASGE-12A WK+ASFU-12A,
ASGE-18A WK+ASFU-18A, ASGE-24A WK+ ASFU-24A,



ASGE-36A WK+ASFU-36A, ASGE-42A WK+ASFU-42A,
ASGE-48A WK+ASFU-48A, ASGE-60A WK+ASFU-60A



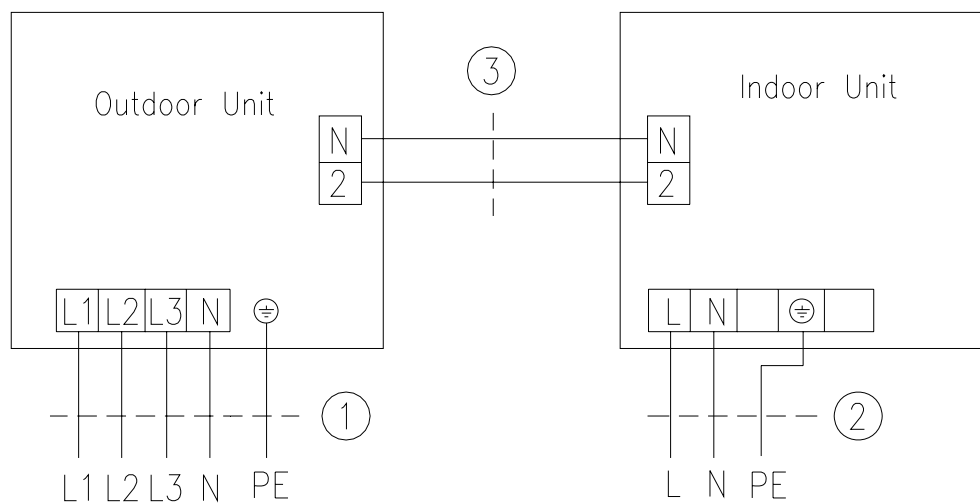
4.2.3 ASGE-09A WK+ASCU-09A, ASGE-12A WK+ ASCU-12A,
ASGE-18A WK+ASCU-18A, ASGE-24A WK+ ASCU-24A,



Power: 220-240V ~50HZ

Power: 220-240V ~50HZ

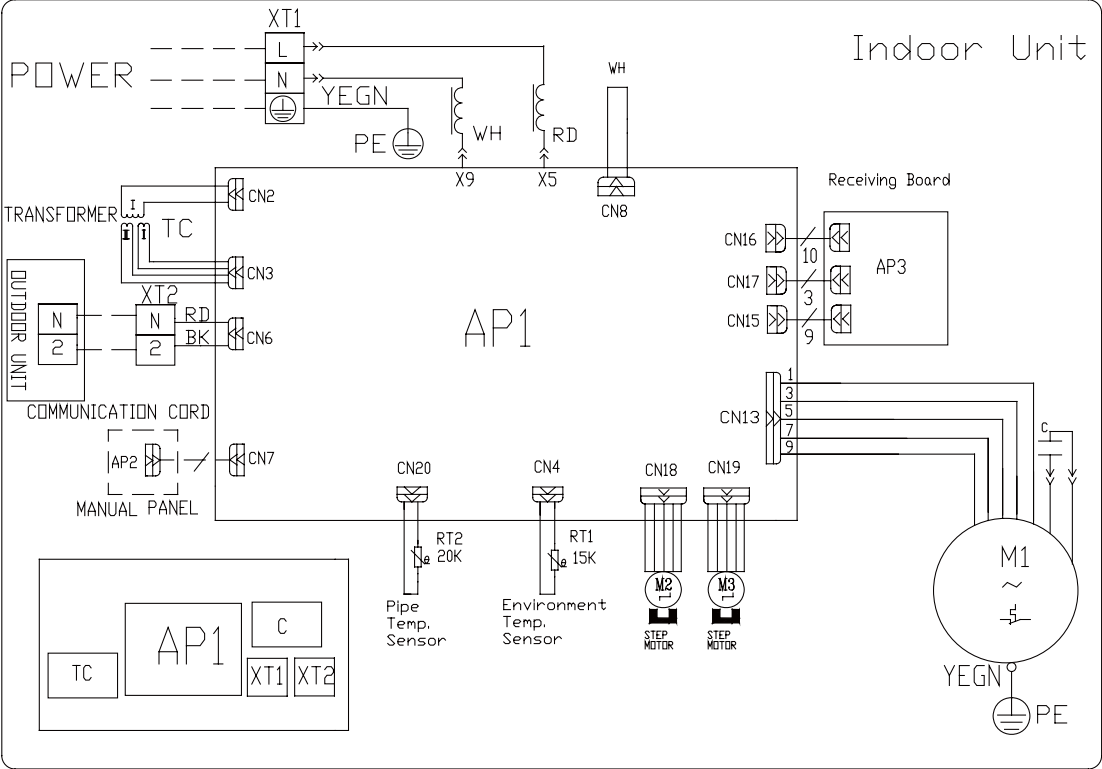
ASGE-36A WK+ASCU-36A, ASGE-42A WK+ASCU-42A,
ASGE-48A WK+ASCU-48A, ASGE-60A WK+ASCU-60A



Power: 380-415V 3N~50HZ

Power: 220-240V ~50HZ

Model: ASFU-60A



4.3 Specification of Power Supply Wire and Air Switch

4.3.1 Outdoor

Model	Power Supply (V, Ph, Hz)	Capability of Air Swith	Minimum Sectional Area of Earth Wire	Minimum Sectional Area of Power Supply Wire
		(A)	(mm ²)	(mm ²)
ASGE-09A WK	220-240, 1, 50	16	2,5	2.5
ASGE-12A WK	220-240, 1, 50	16	2,5	2.5
ASGE-18A WK	220-240, 1, 50	20	4.0	4.0
ASGE-24A WK	220-240, 1, 50	25	4.0	4.0
ASGE-36A WK	380-415, 3, 50	16	2,5	2.5
ASGE-42A WK	380-415, 3, 50	20	4.0	4.0
ASGE-48A WK	380-415, 3, 50	25	4.0	4.0
ASGE-60A WK	380-415, 3, 50	25	4.0	4.0

4.3.2 Indoor Unit

- Duct Type

Model	Power Supply (V, Ph, Hz)	Capability of Air Swith	Minimum Sectional Area of Earth Wire	Minimum Sectional Area of Power Supply Wire
		(A)	(mm ²)	(mm ²)
ASDU-09A	220-240, 1, 50	6	1.0	1.0
ASDU-12A	220-240, 1, 50	6	1.0	1.0
ASDU-18A	220-240, 1, 50	6	1.0	1.0
ASDU-24A	220-240, 1, 50	6	1.0	1.0
ASDU-36A	220-240, 1, 50	10	1.5	1.5
ASDU-42A	220-240, 1, 50	10	1.5	1.5
ASDU-48A	220-240, 1, 50	10	1.5	1.5
ASDU-60A	220-240, 1, 50	10	1.5	1.5

- Ceiling Type

Model	Power Supply (V, Ph, Hz)	Capability of Air Swith	Minimum Sectional Area of Earth Wire	Minimum Sectional Area of Power Supply Wire
		(A)	(mm ²)	(mm ²)
ASFU-09A	220-240, 1, 50	6	1.0	1.0
ASFU-12A	220-240, 1, 50	6	1.0	1.0
ASFU-18A	220-240, 1, 50	6	1.0	1.0
ASFU-24A	220-240, 1, 50	6	1.0	1.0
ASFU-36A	220-240, 1, 50	6	1.0	1.0
ASFU-42A	220-240, 1, 50	6	1.0	1.0
ASFU-48A	220-240, 1, 50	6	1.0	1.0

- Cassette Type

Model	Power Supply (V, Ph, Hz)	Capability of Air Swith	Minimum Sectional Area of Earth Wire	Minimum Sectional Area of Power Supply Wire
		(A)	(mm ²)	(mm ²)
ASCU-12A	220-240, 1, 50	6	1.0	1.0
ASCU-18A	220-240, 1, 50	6	1.0	1.0
ASCU-24A	220-240, 1, 50	6	1.0	1.0
ASCU-36A	220-240, 1, 50	6	1.0	1.0
ASCU-42A	220-240, 1, 50	6	1.0	1.0
ASCU-48A	220-240, 1, 50	6	1.0	1.0

MAINTENANCE

MAINTENANCE

1 TROUBLE TABLE

Trouble Code	Trouble Name	Origin of Trouble Signal	Control Description
E0	Pump Failure	Pump	If water full protection continues for 2 hours and fails to restore, it is believed that the water pump is at fault and all loads are shut off and fail to restore automatically.
E1	Compressor High Pressure Protection	High voltage switch	When high voltage protection is detected for continuous 3 seconds, all loads are shut off (except for the four way valve), all buttons and remote control signals except for power-on or power-off are shielded and fail to restore automatically, the unit should be powered off and on, or failure should be removed after power supply is restored.
E2	Indoor Frost-Proof Protection	Evaporator of indoor unit Thermal bulb	When the unit has been running for refrigeration or dehumidification for a period of time and evaporator thermal bulb is detected to be lower than -2°C , the unit will report a fault and stops the compressor and the outdoor unit. The unit will begin to operate after temperature is $\geq 10^{\circ}\text{C}$ and the compressor keeps outage for 3 minutes.
E3	Compressor Low Pressure Protection	Low voltage switch	When the unit is started or at standby (detection will begin 3 minutes after the compressor is started up) and detected breakdown of the low voltage switch for continuous 30 seconds, a fault is reported. The unit can be restored automatically after the first 2 reported faults within 30 minutes. The third reported fault and so on can not be restored automatically.
E4	Compressor Exhaust High Temperature Protection	Discharge thermal bulb	After the compressor is started, if discharge temperature is detected to be more than or equal to 130 degree for continuous 30 seconds, E4 will be displayed, all loads (except for the four way valve) will be shut off, the compressor will stop for 3 minutes and the complete system will restore after discharge temperature is lower than 90 degree. If such fault is reported for successive three times, the protection can not be restored itself.
E5	Compressor Overheat	Compressor	After the compressor is started, if the overload switch of the compressor is detected to shut off, the fault is reported. All loads (except for the four way valve) are shut off, the fault is displayed, and the compressor will stop for 3 minutes. If the fault is removed, the compressor can be restarted to run. If successive three compressor overload protection faults are detected within

Trouble Code	Trouble Name	Origin of Trouble Signal	Control Description
			30 minutes, the unit can not be restored itself and the buzzer will give out an alarm. Push the ON/OFF button to shut off the unit. And then push ON/OFF button again, if high voltage protection disappears, operation will restore, or otherwise, the fault is displayed.
E6	Communications Failure	Communication	When outdoor unit is energized and fails to receive data of indoor unit within 30 seconds, an indoor unit communication fault is reported. The compressor and the outdoor unit will be shut off, and the four way valve will be stopped 2 minutes after the compressor outage in heating state. If indoor unit fails to receive information of outdoor unit, a communication fault is reported. The indoor unit is shut off and an indicator is twinkling. If the display board fails to receive information of outdoor unit, a communication fault is determined and displayed and the unit does not actuate. After communication becomes normal, the system can restore to the previous running state itself.
E8	Indoor Fan Protection	Indoor unit	If fan overload protection is detected for continuous 3 seconds, relevant compressor and fan shall be shut off immediately and a fault code E8 is displayed, and at the same time, the buzzer gives out an alarm. Push the ON/OFF key, if the fault disappears, clear the fault display and push the ON/OFF key for restarting the system.
E9	Full Water Protection	Liquid level switch	Water full is detected for continuous 8 seconds after the system is powered on, the water full protection is initiated and the indicator is twinkling (or E9 is displayed). Under refrigeration and dehumidification mode, the outdoor fan and the compressor are shut off and the indoor fan stops after 1 minute delay; under heating mode, the outdoor fan and the compressor are shut off, the four way valve keeps at the previous status, and the indoor fan stops after 1 minute delay; under air supply mode, the load of indoor unit remains.
F0	Failure of Indoor Room Sensor at Air Intake	Indoor environment Thermal bulb	Open-circuit or short-circuit of the indoor environment thermal bulb is detected for continuous 5 seconds, indoor environment temperature will be set compulsively at 24 degree, the system does not take any measure, and only the indicator is twinkling or fault code F0 is displayed. After the fault is removed, the system can restore operation by itself. Under air supply mode, only the

Trouble Code	Trouble Name	Origin of Trouble Signal	Control Description
			fault is displayed and the indoor fan is running normally. The fault display disappears when the fault is removed.
F1	Failure of Evaporator Temp. Sensor	Indoor evaporator thermal bulb	Open-circuit or short-circuit of evaporator thermal bulb is detected for continuous 5 seconds, under refrigeration and dehumidification mode, the system will be shut off; and under heating mode, all loads except for the four way valve are shut off. The indicator is twinkling or fault code F1 is displayed. The system can restore by itself and display fault elimination after the fault is removed. Under air supply mode, only the fault is displayed and the indoor unit is running normally. The fault display disappears when the fault is removed.
F2	Failure of Condenser Temp. Sensor	Outdoor condenser thermal bulb	Open-circuit or short-circuit of condenser thermal bulb is detected for continuous 5 seconds, under refrigeration and dehumidification mode, the system will be shut off; and under heating mode, all loads except for the four way valve are shut off. The indicator is twinkling or fault code F2 is displayed. The system can restore by itself and display fault elimination after the fault is removed. Under air supply mode, only the fault is displayed and the indoor unit is running normally. The fault display disappears when the fault is removed. For other types of refrigeration machines except for air duct machine, condenser thermal bulb is not detected.
F3	Failure of Outdoor Ambient Sensor	Outdoor environment thermal bulb	Open-circuit or short-circuit of outdoor environment thermal bulb is detected for continuous 5 seconds, under refrigeration and dehumidification mode, the system will be shut off; and under heating mode, all loads except for the four way valve are shut off. The indicator is twinkling or fault code F3 is displayed. The system can restore by itself and display fault elimination after the fault is removed. Under air supply mode, only the fault is displayed and the indoor unit is running normally. The fault display disappears when the fault is removed.
F4	Failure of Exhaust Temp. Sensor	Discharge thermal bulb	After the compressor is started, open-circuit of discharge thermal bulb is detected for continuous 5 seconds. Under refrigeration and dehumidification mode, all loads will be shut off. Under heating mode, all loads except for the four way valve are shut off. The indicator is twinkling or fault code F4 is displayed. And the buzzer gives out an alarm. After the fault is removed, the system will restore by itself and clear the fault code.

Trouble Code	Trouble Name	Origin of Trouble Signal	Control Description
			If discharge thermal bulb is short circuited, under refrigeration and dehumidification mode, all loads will be shut off. Under heating mode, all loads except for the four way valve are shut off. The indicator is twinkling or fault code F4 is displayed. And the buzzer gives out an alarm. After the fault is removed, the system will restore by itself and clear the fault code.
F5	Failure of Indoor Room Sensor at Wire Controller	Line controller	Open-circuit or short-circuit of line controller thermal bulb is detected for continuous 5 seconds, indoor environment temperature will be set compulsively at 24 degree, the system does not take any measure, and only the indicator is twinkling or fault code F0 is displayed. After the fault is removed, the system can restore operation by itself. Under air supply mode, only the fault is displayed and the indoor fan is running normally. The fault display disappears when the fault is removed.

2、Cassette Type Indoor Unit's Error Indicating:

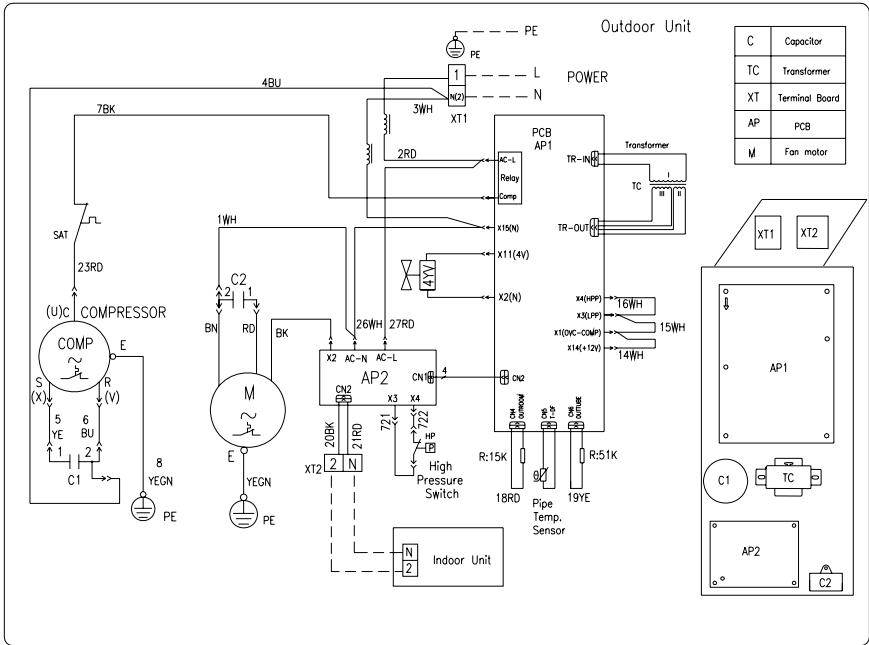
LED	No error	Flash times every two seconds	Error description
yellow: Timing indicating lamp	It goes on as per the set time, And it flashes when the temperature sensor error occurs	once	the indoor ambient temperature sensor error
		twice	the evaporator temperature sensor error
		three times	the condenser temperature sensor error
		four times	the outdoor ambient temperature sensor error
		five times	the discharge air temperature sensor error
green : Compressor indicating lamp	It goes on/off as the compressor is turned on/off. And it flashes when defrosting or the compressor error occurs	twice	Defrosting
		three times	high pressure protection
		four times	the low pressure protection
		five times	Overload protection
		six times	Discharge high temperature protection
red : Running indicating lamp	It goes on/off as the unit is turned on/off, And it flashes when the indoor unit error occurs	twice	the water overflow protection
		three times	the anti-freezing error
		four times	Anti-high temperature protection

3 WIRING DIADRAM

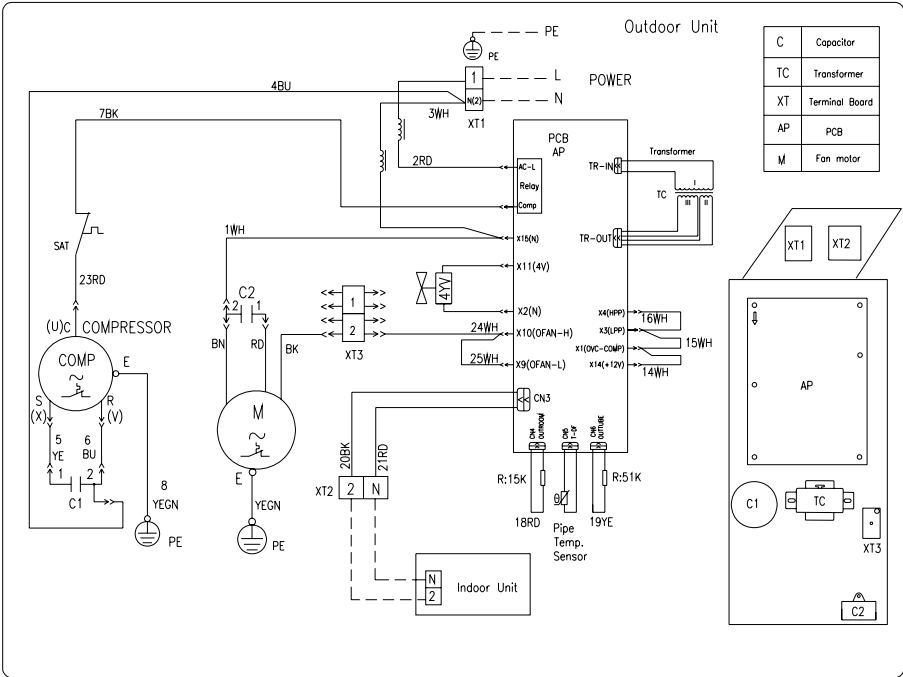
3.1 Wiring Diagram-Outdoor Units

1、ASGE-09A WK

WITH FUNCTION OF LOW TEMP. COOLING:

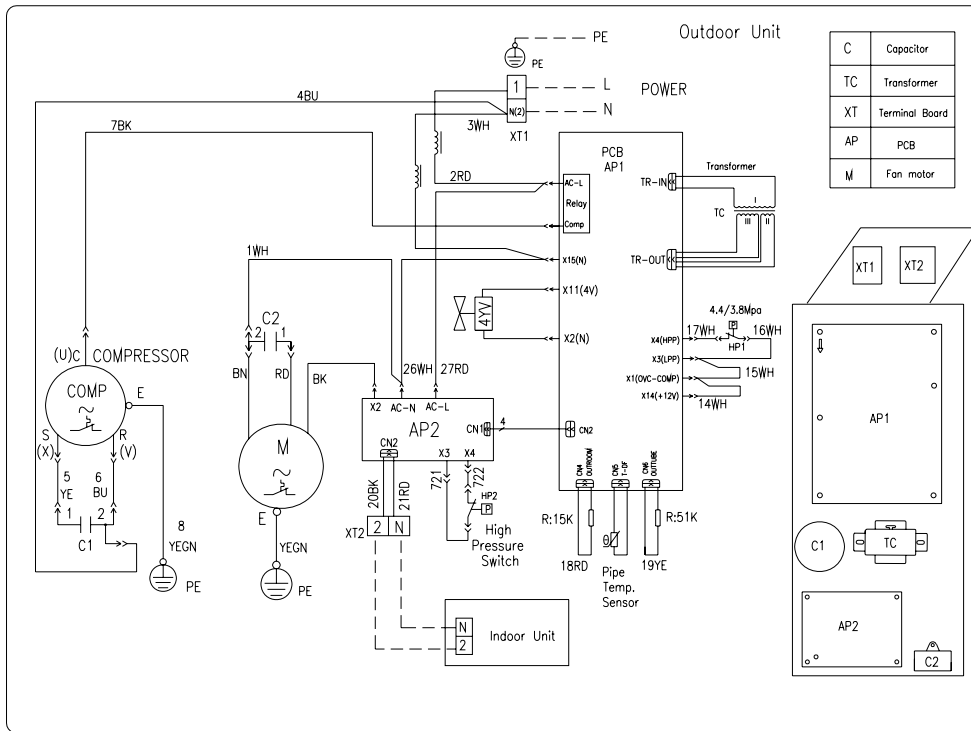


ASGE-09A WITHOUT FUNCTION OF LOW TEMP. COOLING:

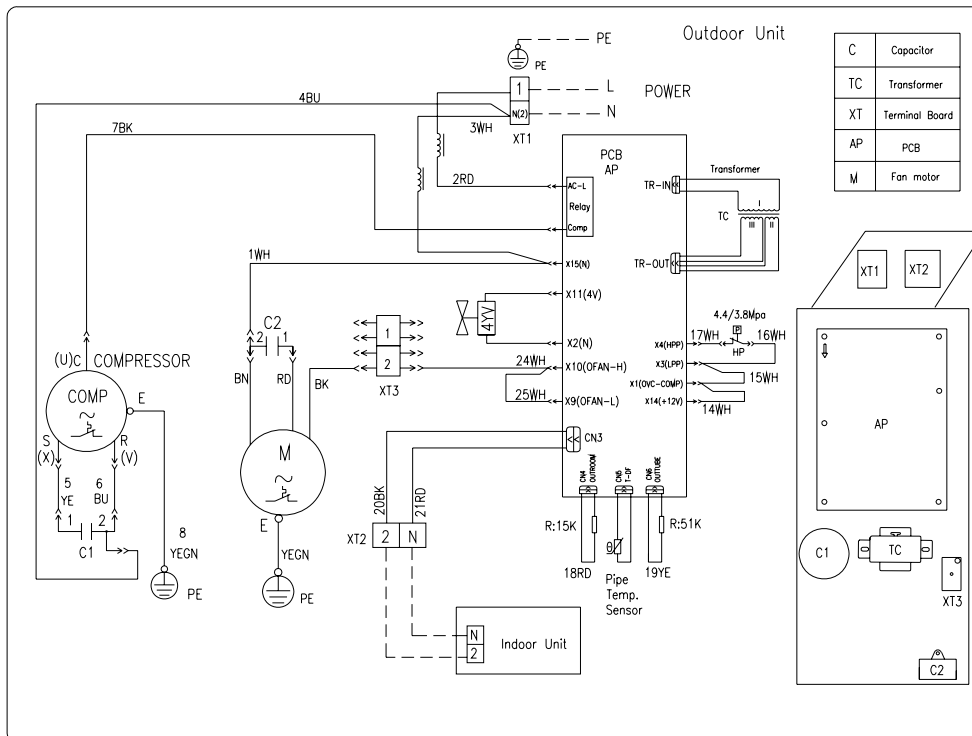


3、ASGE-18A WK

WITH FUNCTION OF LOW TEMP. COOLING:

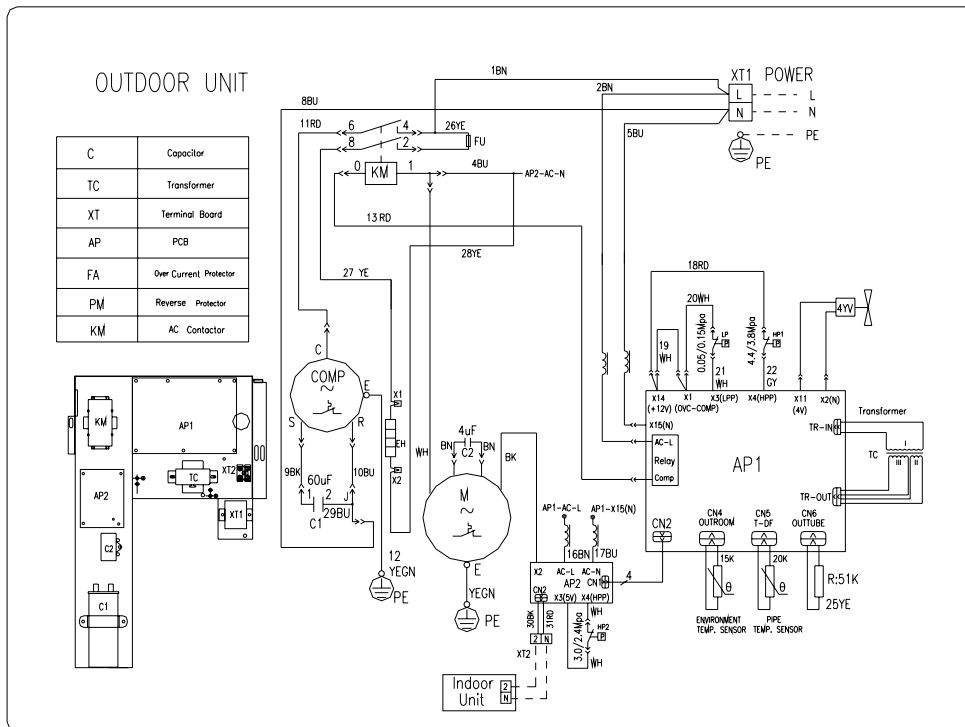


ASGE-18A: WITHOUT FUNCTION OF LOW TEMP. COOLING:

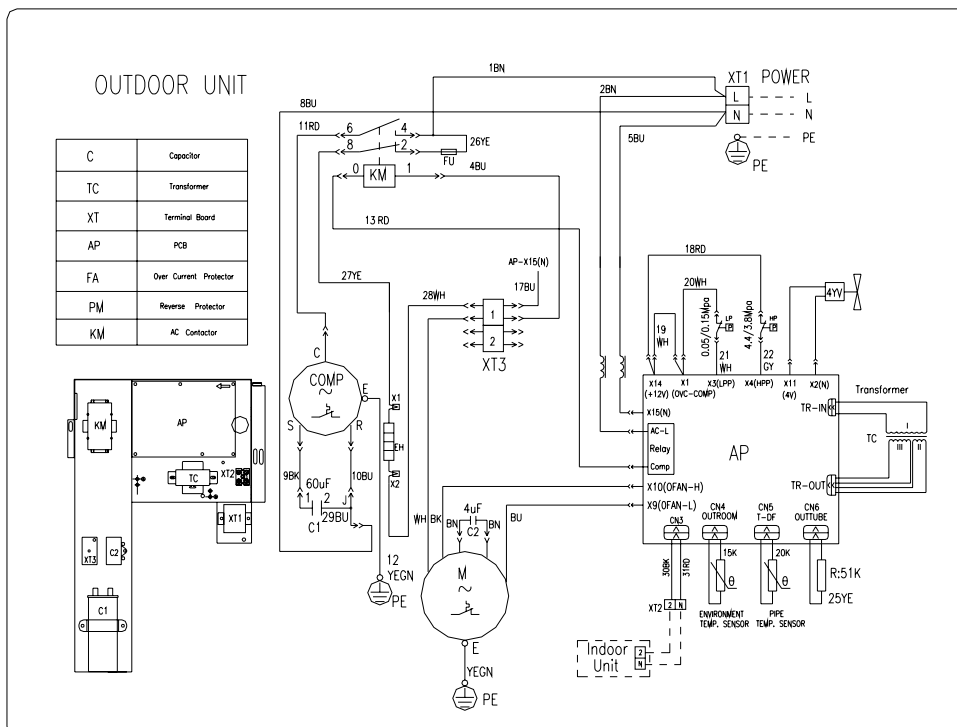


4、 ASGE-24A WK

WITH FUNCTION OF LOW TEMP. COOLING:

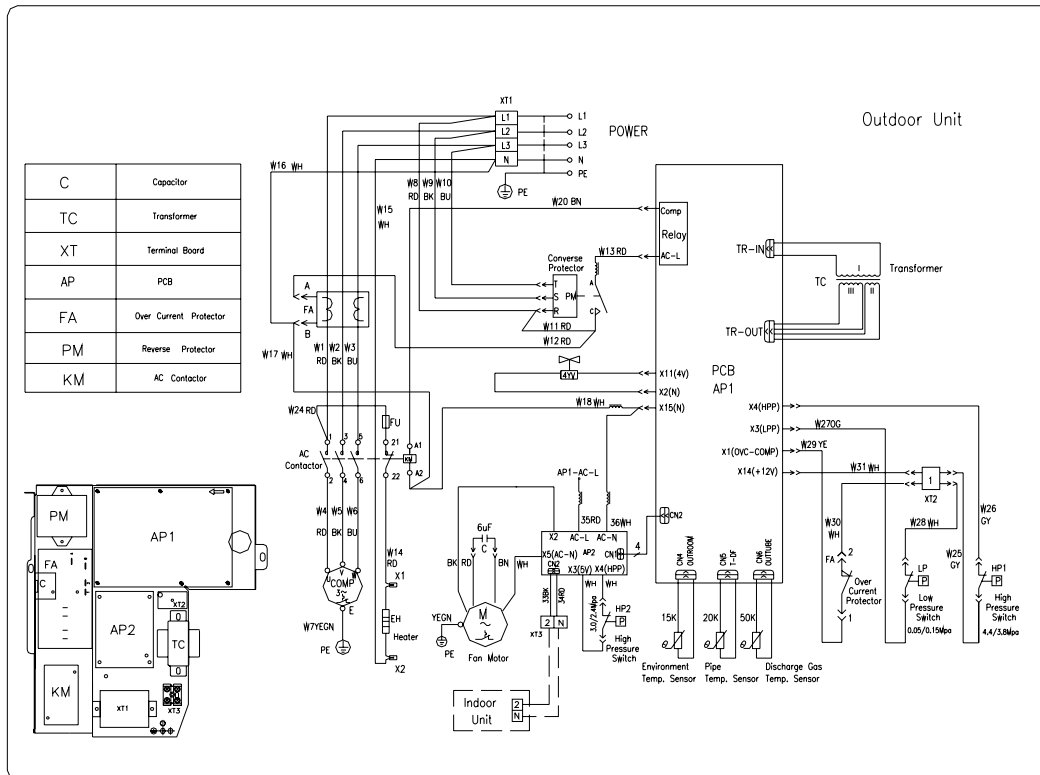


ASGE-24A: WITHOUT FUNCTION OF LOW TEMP. COOLING:

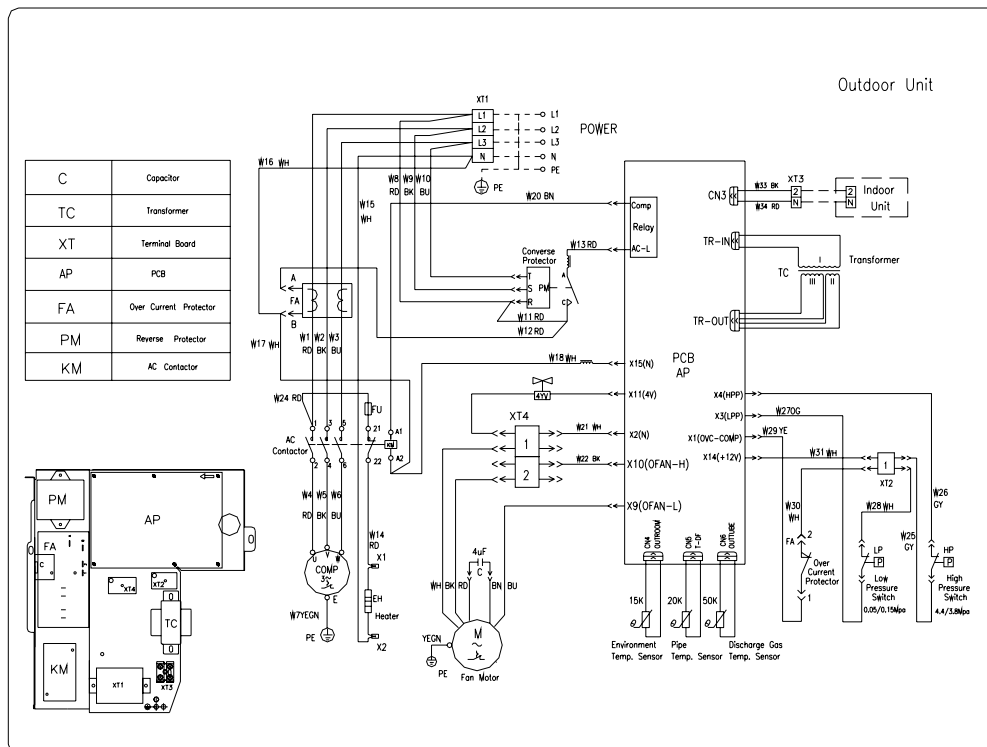


6、ASGE-36A WK

WITH FUNCTION OF LOW TEMP. COOLING:

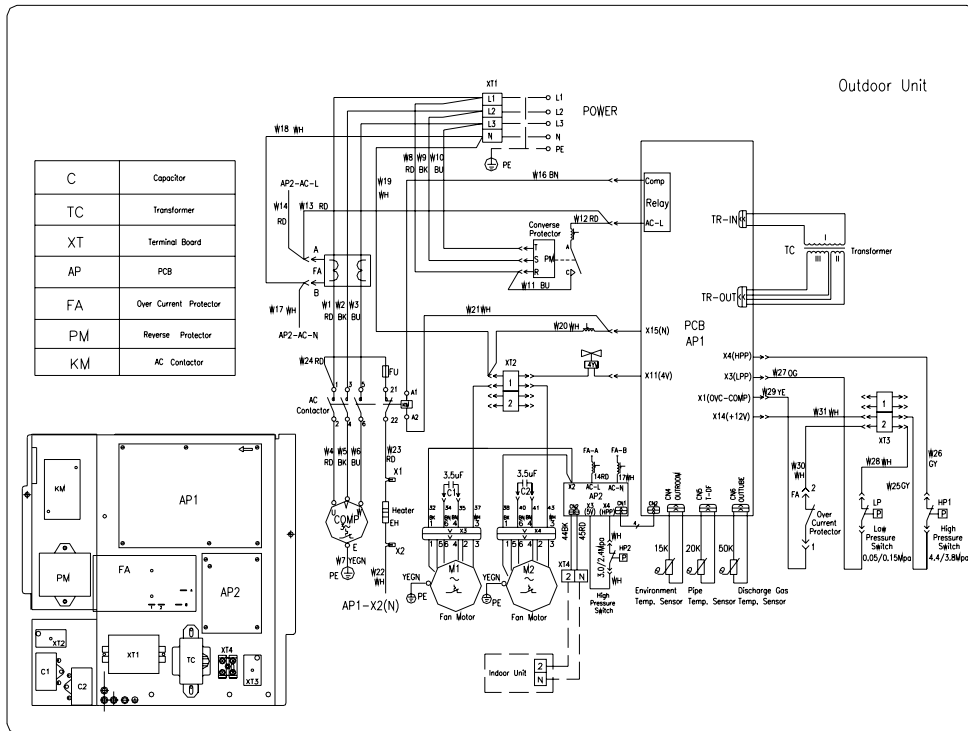


ASGE-36A: WITHOUT FUNCTION OF LOW TEMP. COOLING:

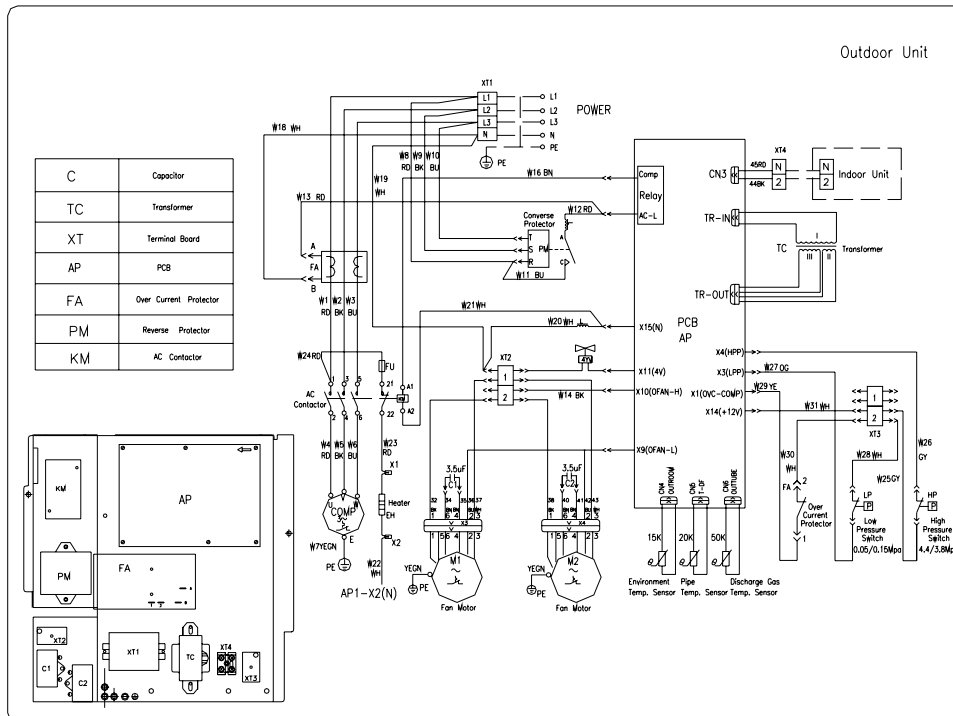


7、ASGE-42A WK

WITH FUNCTION OF LOW TEMP. COOLING:



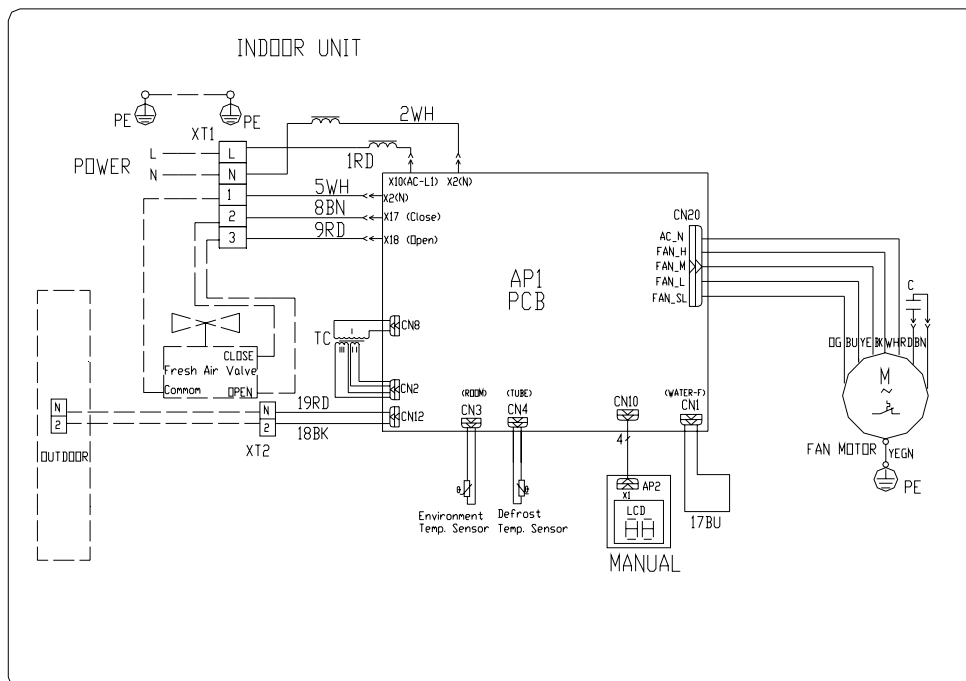
ASGE-42A: WITHOUT FUNCTION OF LOW TEMP. COOLING:



3.2 Wiring Diagram-Indoor units

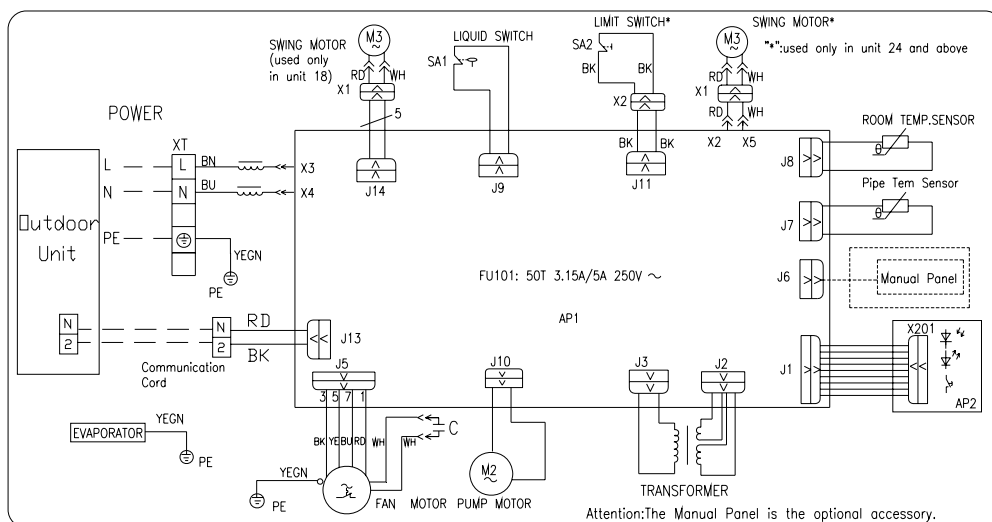
3.2.1 Duct Type

Model: ASDU-09A; ASDU-12A; ASDU-18A; ASDU-24A; ASDU-36A; ASDU-42A; ASDU-48A; ASDU-60A;



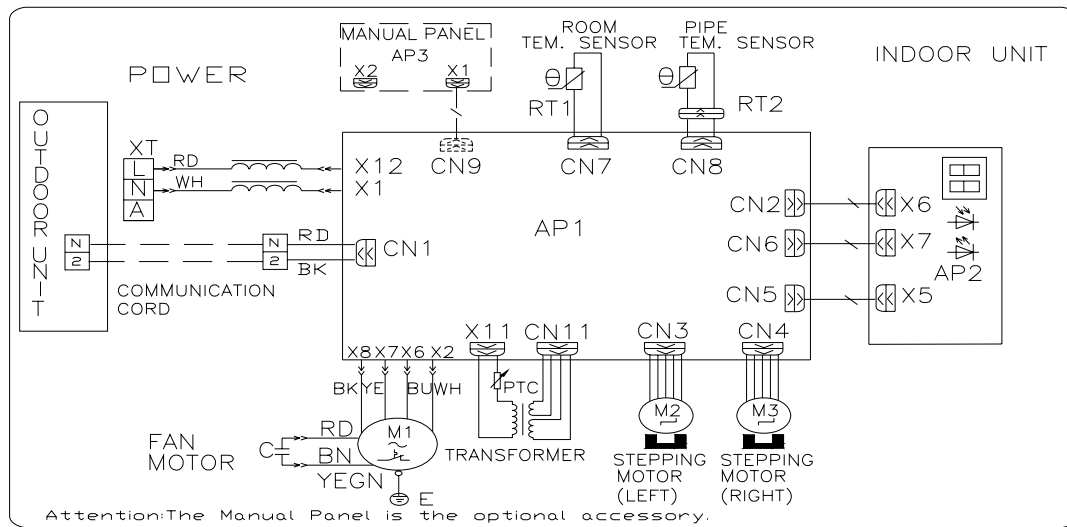
3.2.3 Cassette Type

Model: ASCU-12A; ASCU-18A; ASCU-24A; ASCU-36A; ASCU-42A; ASCU-48A



3.2.2 Ceiling Type

Model: ASFU-12A; ASFU-18A; ASFU-24A; ASFU-36A; ASFU-42A; ASFU-48A;



3.3 Fan Motor Speed Setup

For fan motor speed, there are 3 wire terminals for 3 speed, all power supply is 230V.

BK black wire is HIGH speed

YE yellow wire is MIDDLE speed

BU blue wire is LOW speed

OG orange wire is speed (only for duct type, ASDU units)

2 FLOW CHART OF TROUBLESHOOTING

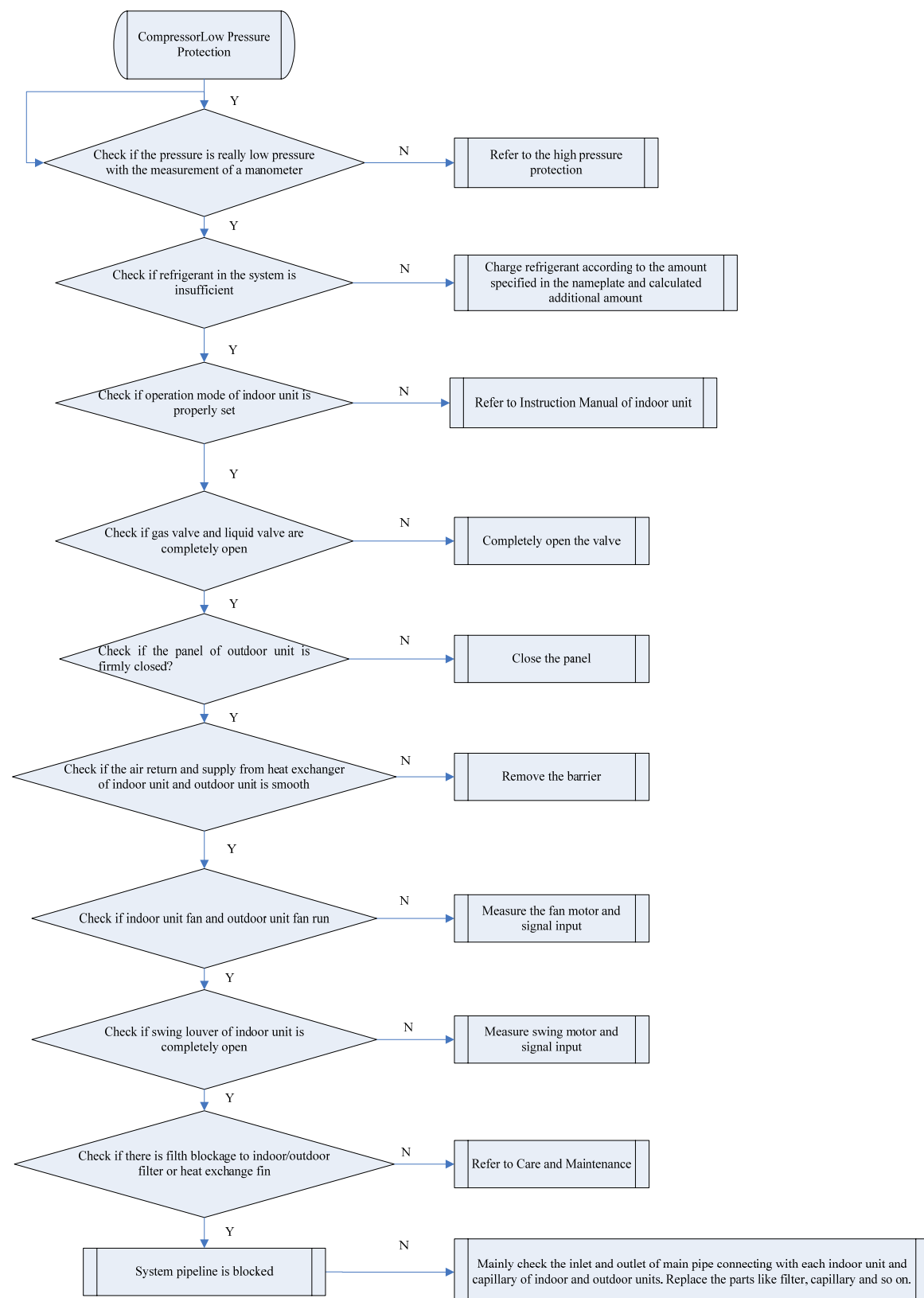
Service personnel shall collect the malfunction information as much as possible and research them thoroughly, list these electrical parts which may cause malfunction, service personnel shall be able to determine the specific reason and solve the faulted parts.

- Observe the status of the complete device and do not observe the partial
- It is advised to start from the simple operation during analyzing, judging and confirming malfunction reason, then conduct the complicated operations such removal of device, part replacement and refrigerant filling.
- Find the malfunction reason carefully as unit may occur several malfunction at the same time and one malfunction may develop into several malfunction, so entire system analysis shall be established to make the judged result exact and credible.

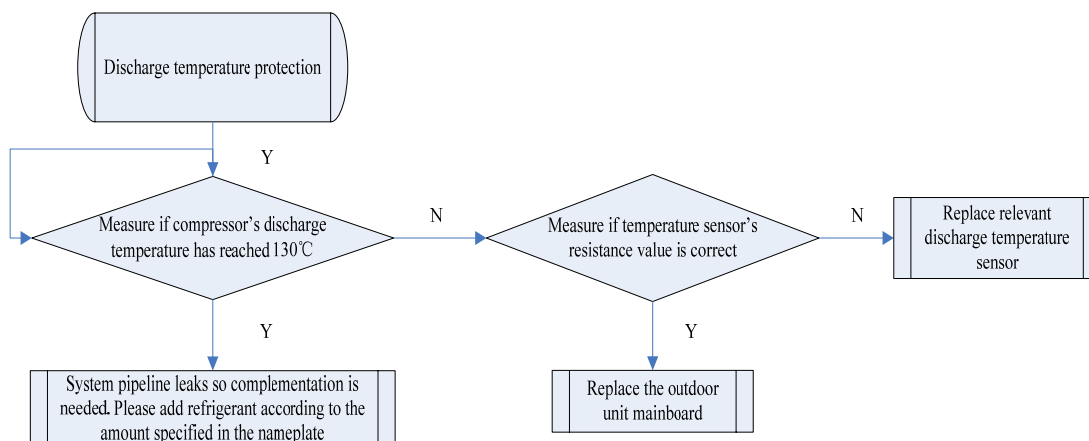
◆ Malfunction display: E1 Compressor High Pressure Protection



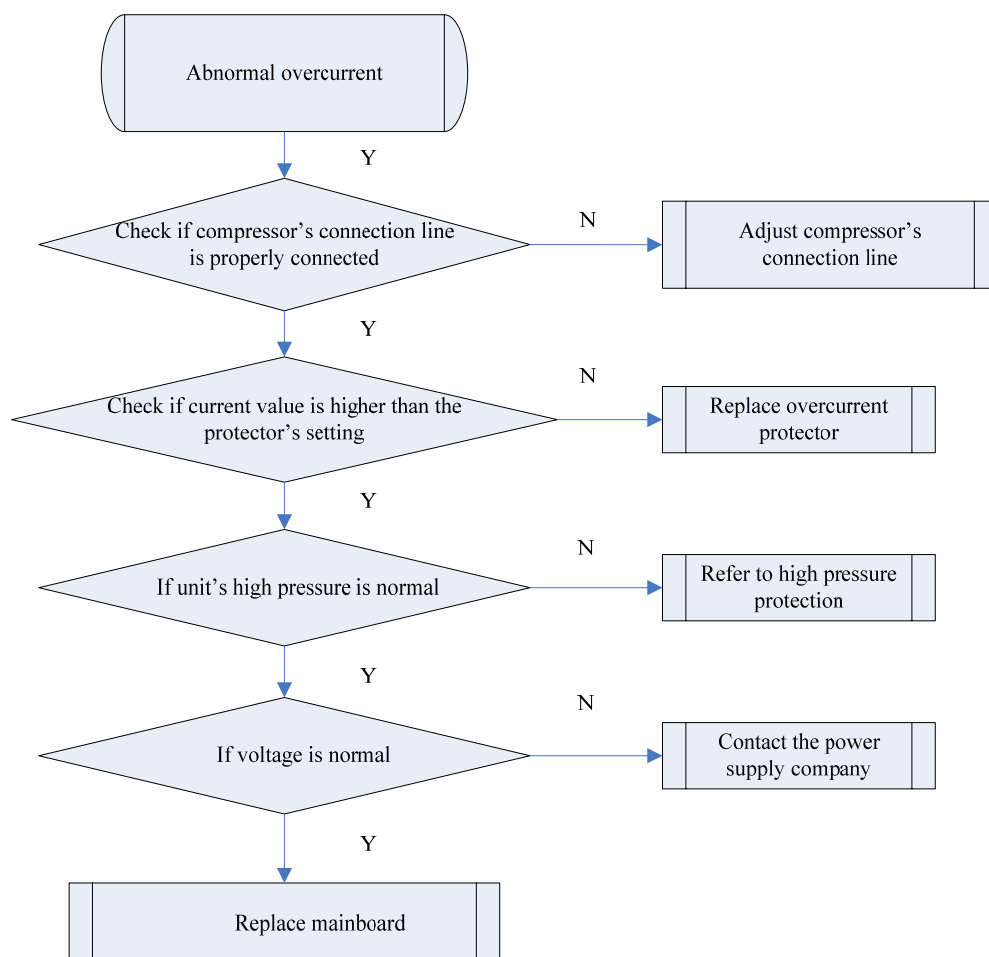
◆ Malfunction display: E3 Compressor Low Pressure Protection



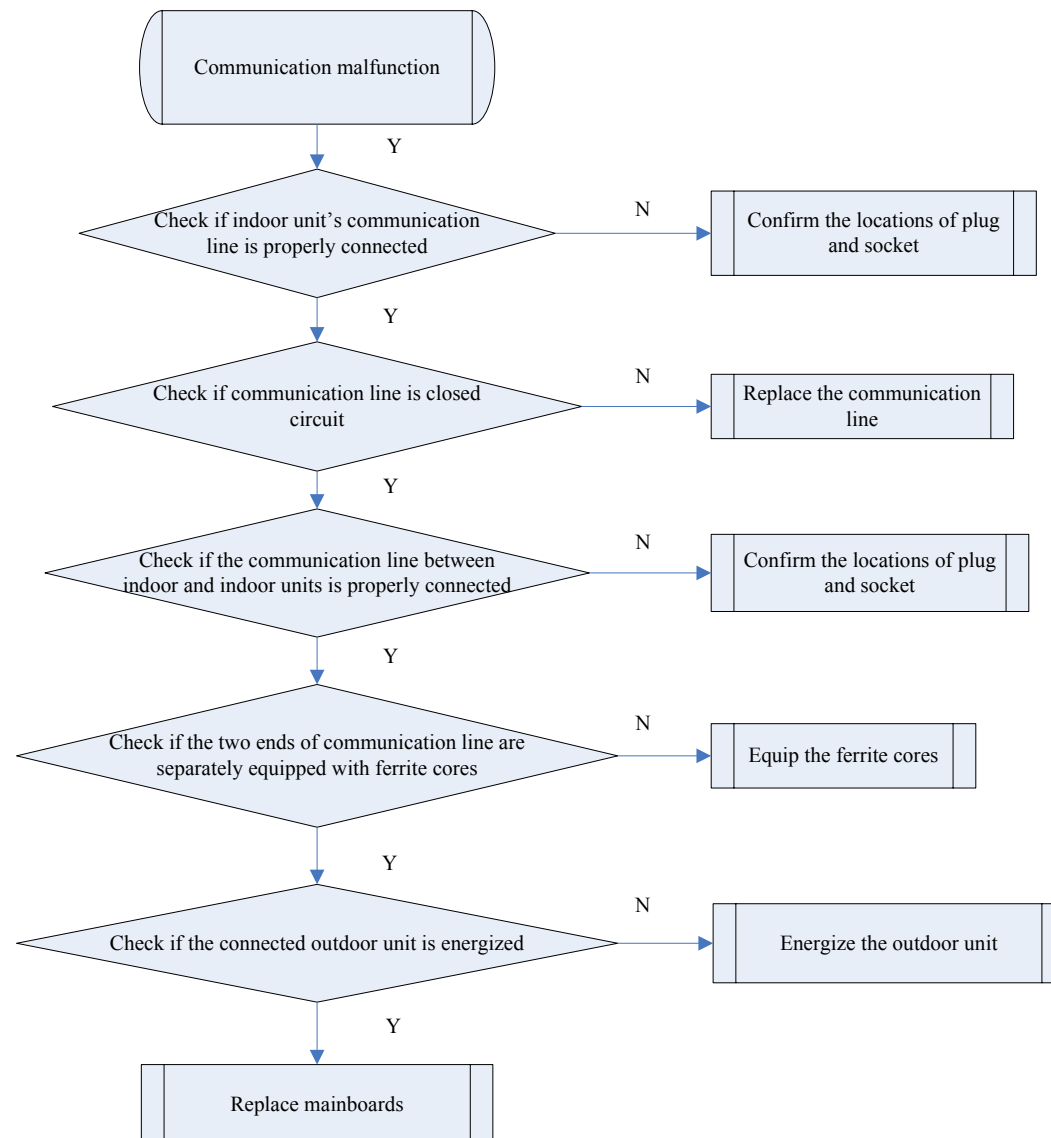
◆ Malfunction display: E4 Compressor Exhaust High Temperature Protection



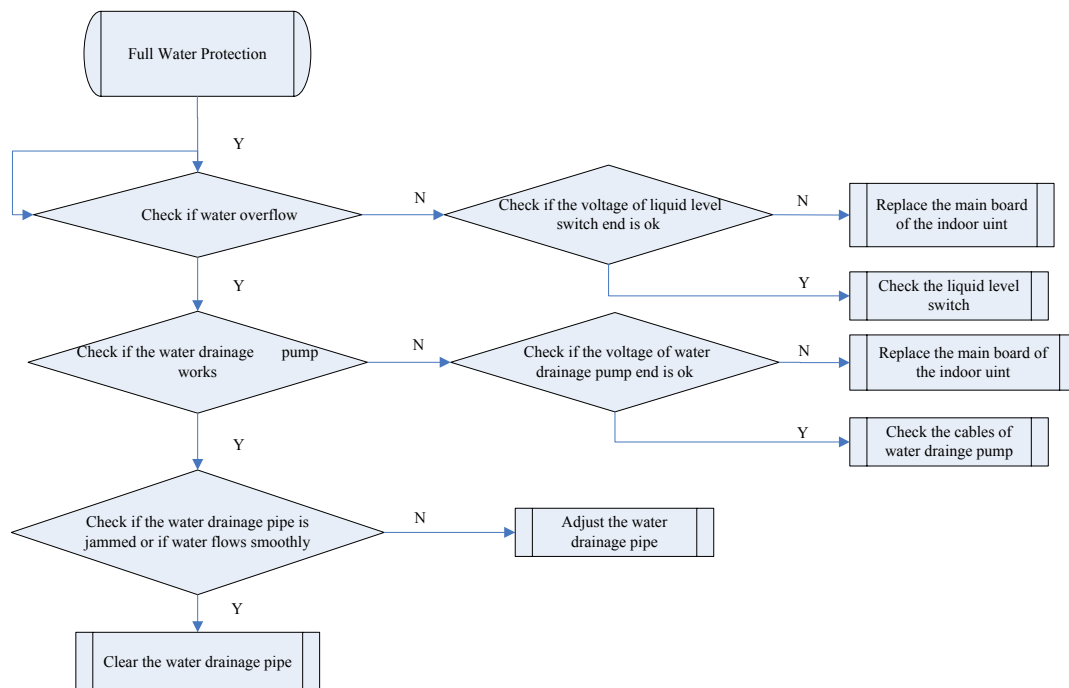
◆ Malfunction display: E5 Compressor Overheat



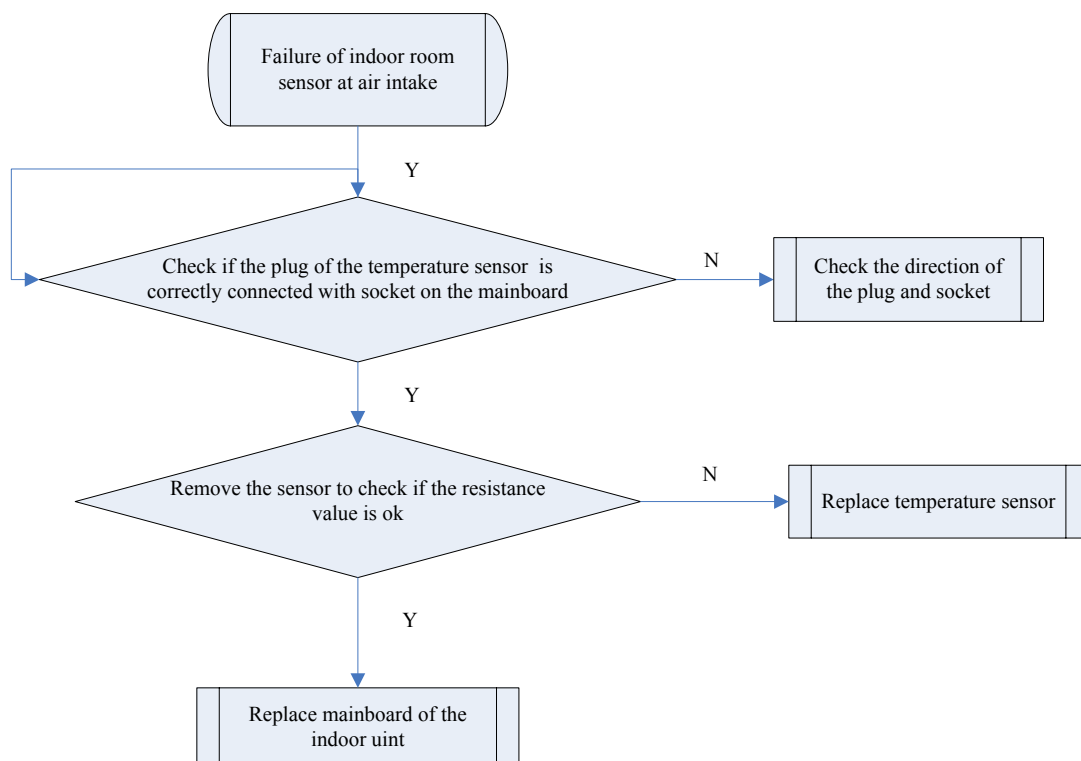
◆ Malfunction display: E6 Communications Failure



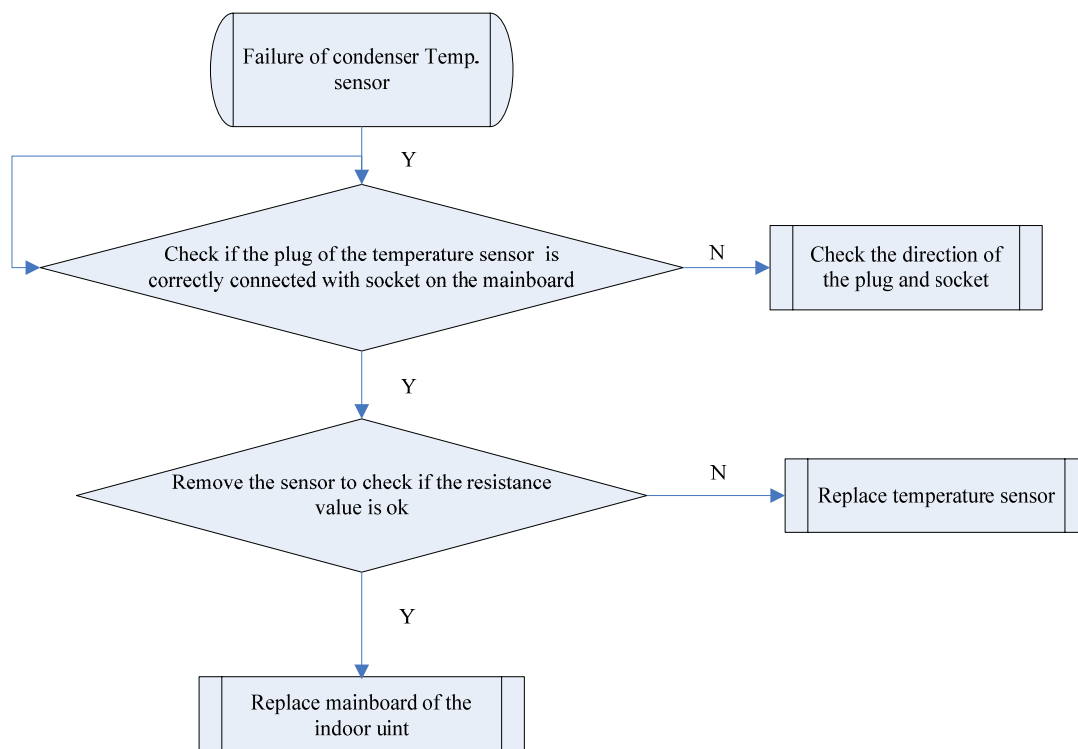
◆ Malfunction display: E9 Full Water Protection



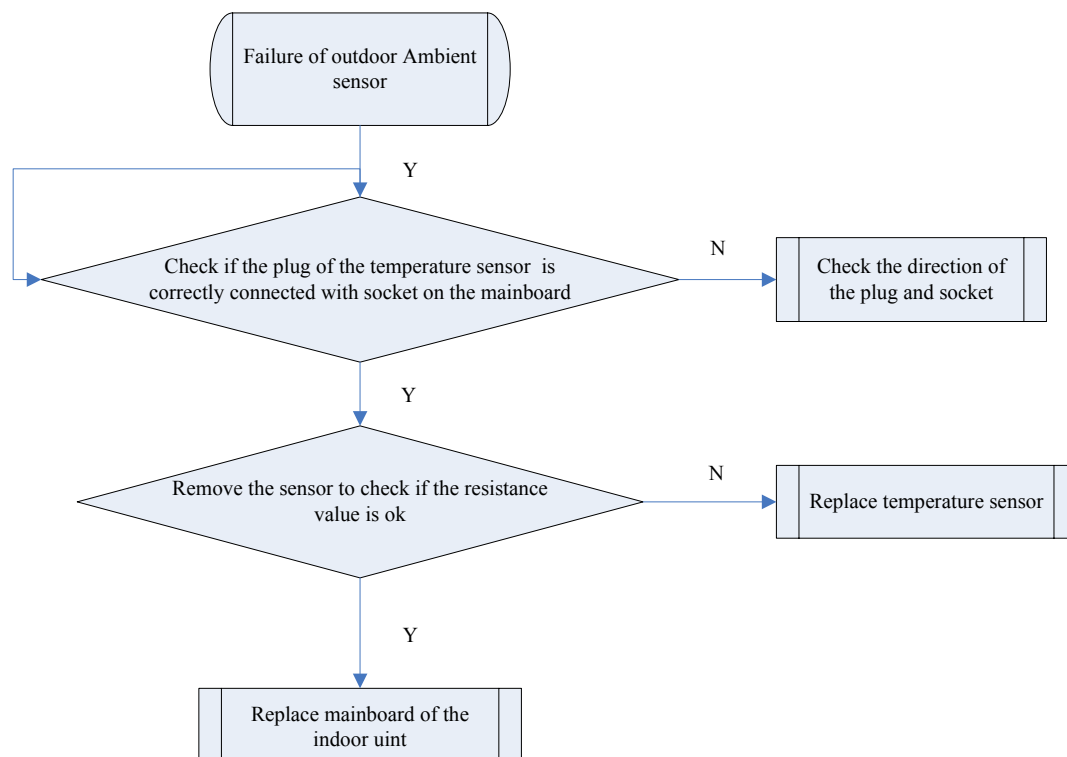
◆ Malfunction display: F0 Failure of Indoor Room Sensor at Air Intake



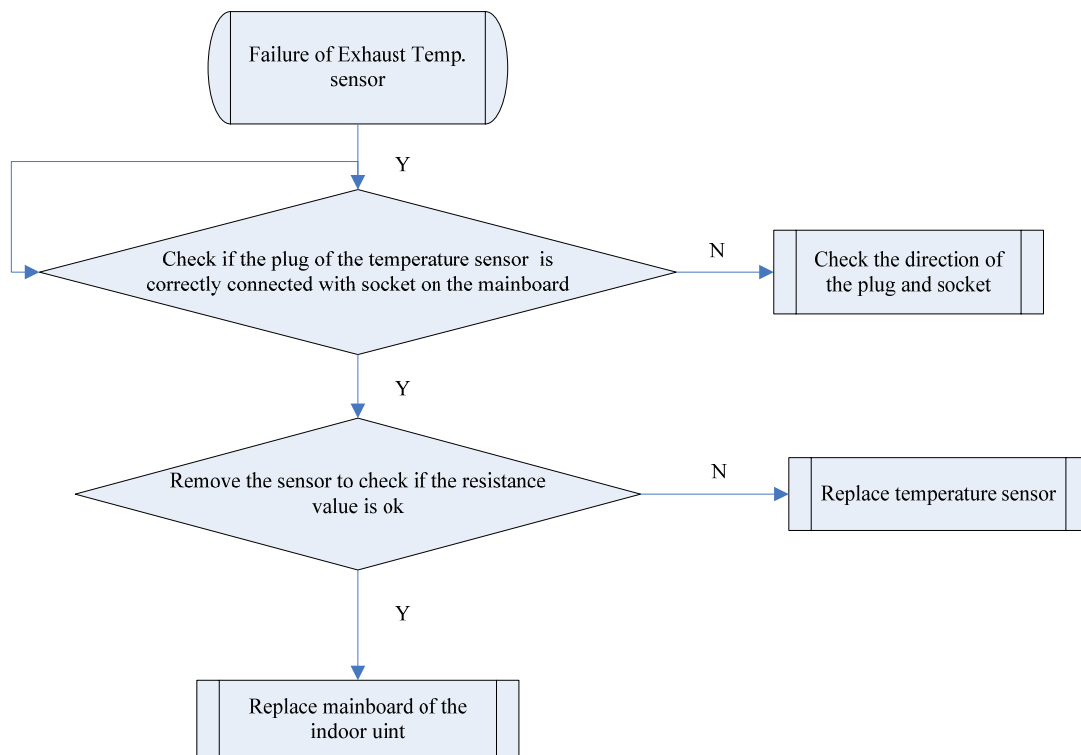
◆ Malfunction display: F1 Failure of Evaporator Temp. Sensor



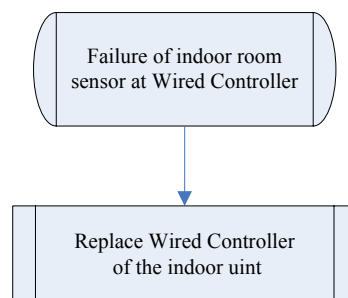
◆ Malfunction display: F3 Failure of Outdoor Ambient Sensor



◆ Malfunction display: F4 Failure of Exhaust Temp. Sensor



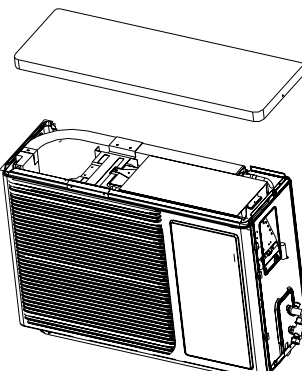
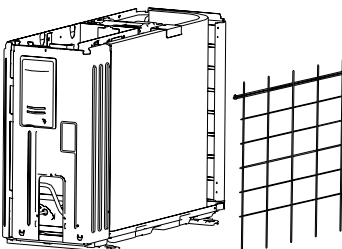
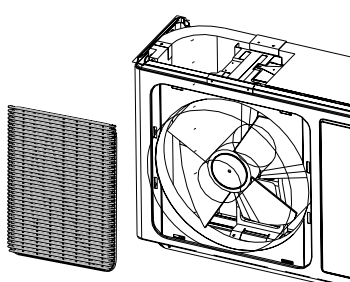
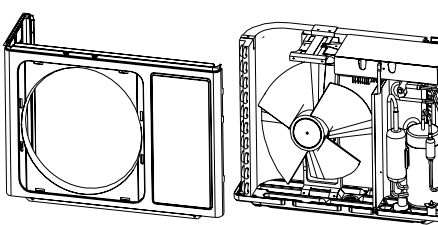
◆ Malfunction display: F5 Failure of Indoor Room Sensor at Wire Controller

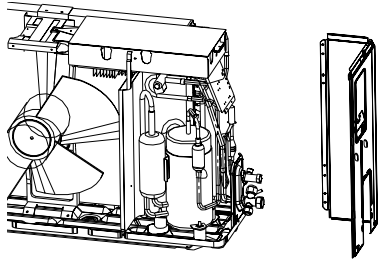
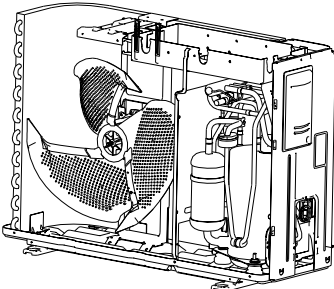
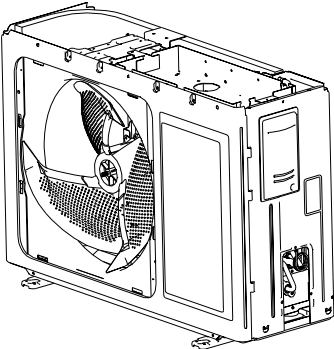
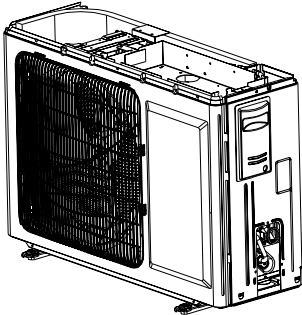
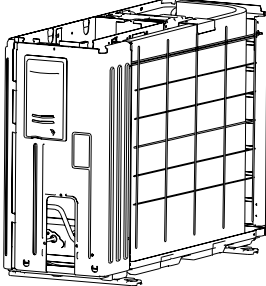


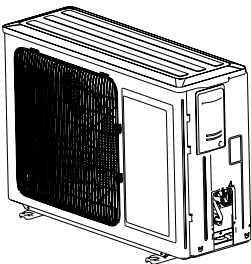
4 DISASSEMBLY AND ASSEMBLY PROCEDURE OF MAIN PARTS

4.1 Outdoor Unit

ASGE-09A WK TO ASGE-18A WK

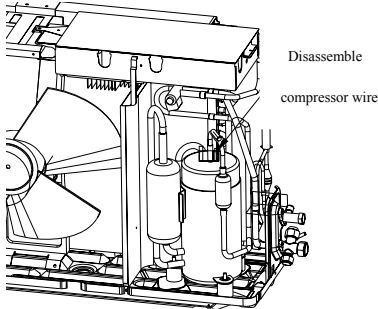
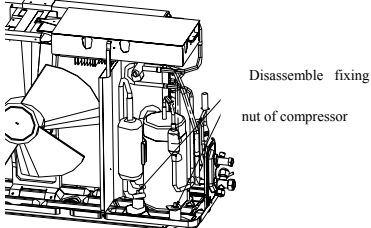
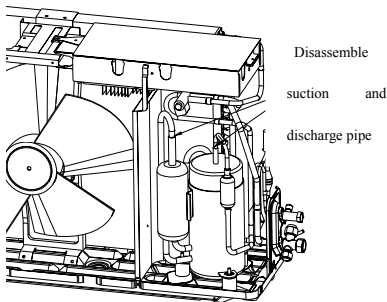
Disassembly and Assembly of external casing		
Remark: Make sure that power supply is cut off before disassembling the external casing.		
Step	Illustration	Handling Instruction
1. Disassembly of coping		<ul style="list-style-type: none"> •Disassemble the fixing screw surrounding the coping with screwdriver •Remove coping from the unit.
2. Disassembly of screen		<ul style="list-style-type: none"> •Loose fixing screw surrounding the screen with screwdriver. •Remove screen from the unit.
3. Disassembly of panel grating		<ul style="list-style-type: none"> •Disassemble the screws of the fixing panel grating with screwdriver. •Disassemble and remove the panel grating from the panel (external casing).
4. Disassembly of panel (external casing)		<ul style="list-style-type: none"> •Disassemble the fixing screw surrounding the panel (external casing); •Remove the panel (external casing) from the unit.. •Some types (24k and above) require disassembling the front panel outside the external casing first before removing it.

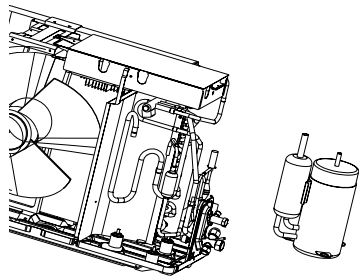
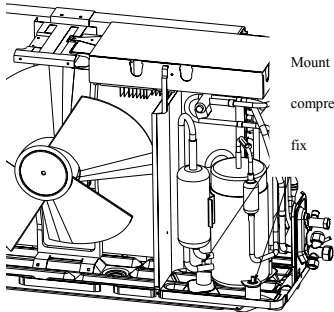
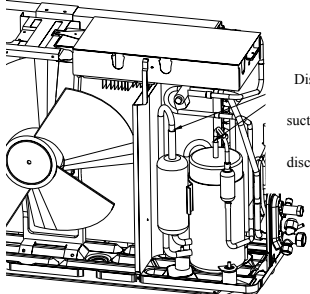
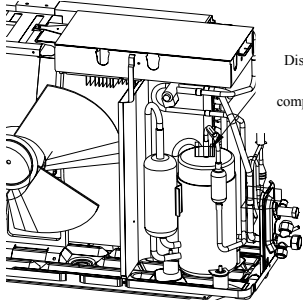
5. Disassembly of right (back) panel		<ul style="list-style-type: none"> •Disassemble the screws surrounding the right (back) panel with screwdriver. •Remove the right (back) panel from the unit.
6. Assembly of new right (back) panel		<ul style="list-style-type: none"> •Put new right (back) panel into right position. •Screw down the surrounding fixing screw with screwdriver.
7. Assembly of new panel (external casing)		<ul style="list-style-type: none"> •Put new panel (external casing) into right position on the unit; •Screw down the surrounding fixing screw with screwdriver. •Some types (24k and above) need to be equipped with front panel outside the external casing.
8. Assembly of new panel grating		<ul style="list-style-type: none"> •Put new panel grating into right position on the unit •Screw down the surrounding fixing screw with screwdriver.
9. Assembly of new screen		<ul style="list-style-type: none"> •Put new screen into the right position on the unit. •Screw down the surrounding fixing screw with screwdriver.

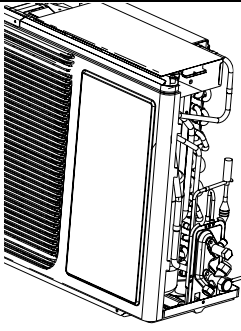
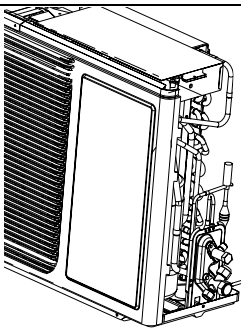
10. Assembly of new coping		<ul style="list-style-type: none"> ● Put the new coping into the right position on the unit. ● Screw down the surrounding fixing screw with screwdriver.
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Disassembly and Assembly of Compressor

Remark : Make sure there isn't any refrigerant in pipe system and the power supply is cut off before removal of the compressor..

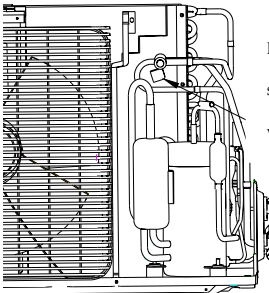
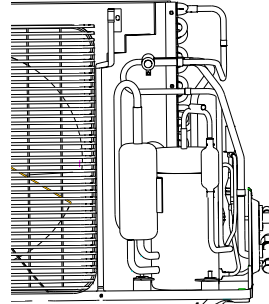
Step	Illustration	Handling Instruction
1. Disassembly of compressor wires		<ul style="list-style-type: none"> ● Loose the fixing screw for the power supply wire with screwdriver. ● Pull down the power supply wire. ● Attention: During removal of the power supply wire, mark wire color with the corresponding joint number in case of wrong connection.
2. Disassembly of fixing nuts on compressor		<ul style="list-style-type: none"> ● Disassemble the fixing nut on the compressor with wrench.
3. Disassembly of suction and discharge pipe		<ul style="list-style-type: none"> ● Heat the suction and discharge pipe with gas welding before removing compressor. ● Provide nitrogen protection during gas welding and the nitrogen pressure should be $0.5 \pm 0.1 \text{ kgf/cm}^2$ (relative pressure) . ● Please pay attention to heating in case that surrounding materials should be burnt by high temperature.

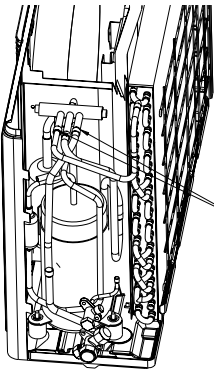
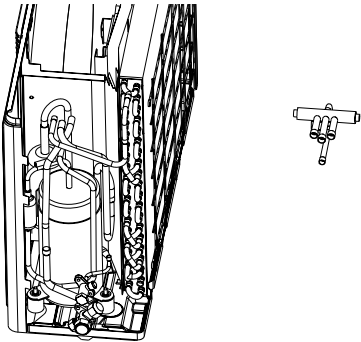
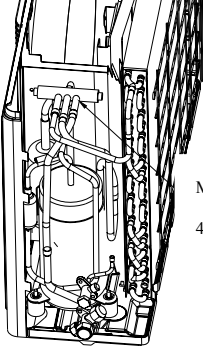
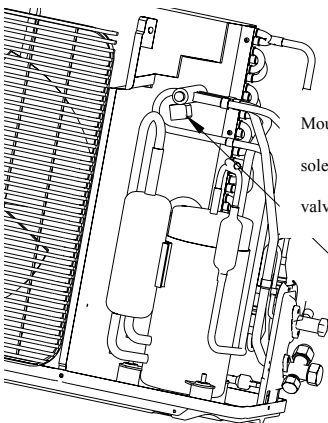
4. Removal of compressor		<ul style="list-style-type: none"> ● Remove compressor from underpan.
5. Assembly of new compressor on the underpan	 <p>Mount new compressor and fix</p>	<ul style="list-style-type: none"> ● Position accurately the new compressor on the unit. ● Screw down fixing nut for compressor with wrench. ● Do not up-side-down compressor during assembly.
6. Connection of suction and discharge pipe of compressor with pipe line system	 <p>Disassemble suction and discharge pipe</p>	<ul style="list-style-type: none"> ● Heat suction and discharge pipe with gas welding before removing compressor. ● Provide nitrogen protection during gas welding and the nitrogen pressure should be $0.5 \pm 0.1 \text{ kgf/cm}^2$ (relative pressure) . ● Please pay attention to heating in case that surrounding materials should be burnt by high temperature.
7. Correct connection of wires for power supply of compressor	 <p>Disassemble compressor wire</p>	<ul style="list-style-type: none"> ● Install power supply wire onto fixing in the order of disassembly. ● Screw down fixing screw for power supply wire with screwdriver.

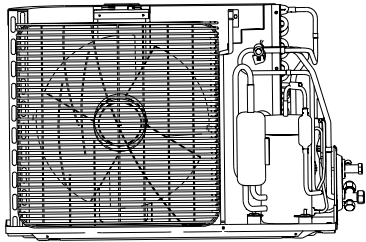
8. Vacuum pumping with fluorin injection mouth	 <p>Vacuum pumping through process pipe</p>	<ul style="list-style-type: none"> ● Pump vacuum through fluorin injection mouth.
9. Refill of cooling medium through fluorin injection mouth	 <p>Vacuum pumping through process pipe</p>	<ul style="list-style-type: none"> ● Refill cooling medium into system through fluorin injection mouth ● Volume of refilling should be in accordance with the requirement on the unit nameplate.

Disassembly and Assembly of 4-way valve

Remark: Make sure there isn't any refrigerant in pipe system and the power supply is cut off before removal of the 4-way valve.

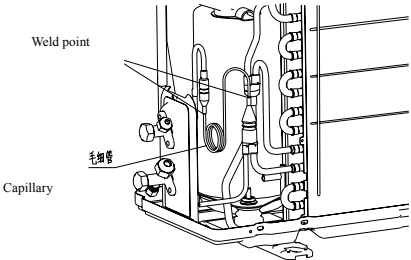
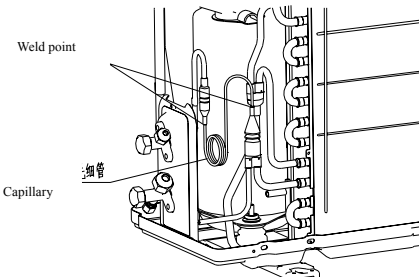
Step	Illustration	Handling Instruction
1. Disassembly of solenoid valve	 <p>Disassemble solenoid valve</p>	<ul style="list-style-type: none"> ● Cut off power supply and reclaim cooling medium properly. ● Disassemble solenoid valve with wrench.
2. Removal of electromagnetic valve		<ul style="list-style-type: none"> ● Take and remove solenoid valve from 4-way valve.

3. Disassembly of 4-way valve	 <p>Disassemble connecting pipes at E,S,D and C orifices</p> <p>8、 接管</p>	<ul style="list-style-type: none"> ●Heat connection pipes for 4 pipes of 4-way valve with gas welding before removal of 4-way valve. ●Record the direction of the 4-way valve and installation position of each pipe before welding away 4-way valve.
4. Removal of 4-way valve		<ul style="list-style-type: none"> ●Remove the old 4-way valve from the pipe line.
5. Assembly of new 4-way valve	 <p>Mount a new 4-way valve</p>	<ul style="list-style-type: none"> ●Position accurately the new 4-way valve. ●Connect new 4-way valve with pipe line. ●Wrap the valve with wet cloth when welding 4-way valve in case sliding block inside the valve should be burnt and water flow into the pipe line. ●Welding with nitrogen and the nitrogen pressure shall be $0.5 \pm 0.1 \text{ kgf/cm}^2$ (relative pressure).
6. Assembly of solenoid valve	 <p>Mount solenoid valve</p> <p>7、电磁阀</p>	<ul style="list-style-type: none"> ●Assemble solenoid valve onto the new 4-way valve in order of disassembly.

7. Examination of System and cooling medium filling		<ul style="list-style-type: none"> ● Pump vacuum and fill cooling medium if the system leak test passes.
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Disassembly and Assembly of capillary

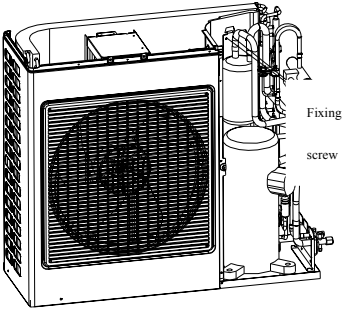
Remark: Make sure there isn't any refrigerant in pipe system and the power supply is cut off before removal of the capillary.

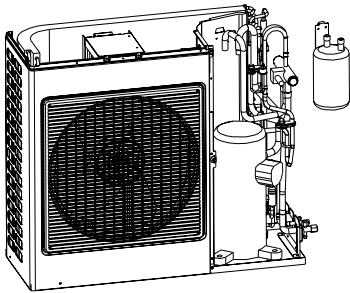
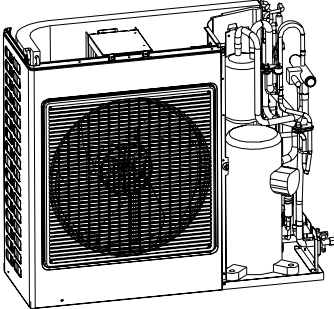
Step	Illustration	Handling Instruction
1. Disassembly of capillary		<ul style="list-style-type: none"> ● Weld two welding points connecting capillary with other pipe lines. ● Remove capillary.
2. Assembly of new capillary		<ul style="list-style-type: none"> ● Assemble new capillary. ● Weld the points connected with other pipe lines. ● Re-examine the leak hunting of system. Pump vacuum and fill the cooling medium.

Disassembly and Assembly of Vapour Liquid Separator

Remark: Make sure there isn't any refrigerant in pipe system and the power supply is cut off before removal of the vapor liquid separator.

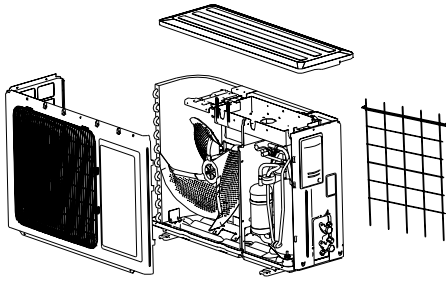
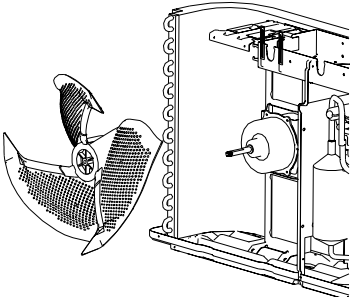
(Needless for types under 24k Btu/h)

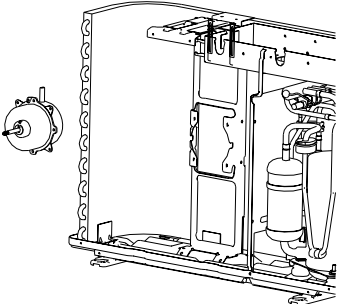
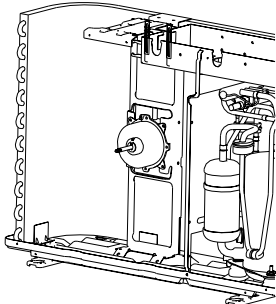
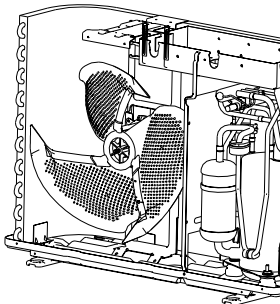
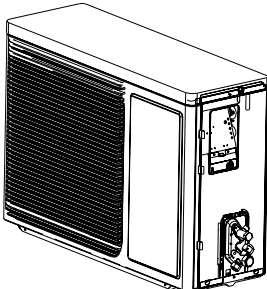
Step	Illustration	Handling Instruction
1. Disassembly of Fixing screw for liquid reservoir		<ul style="list-style-type: none"> ● Disassemble two fixing screws for reservoir pothook with screwdriver.

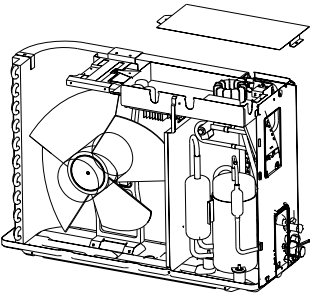
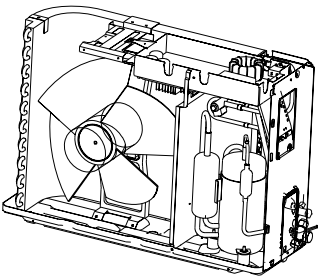
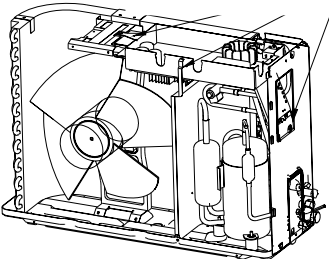
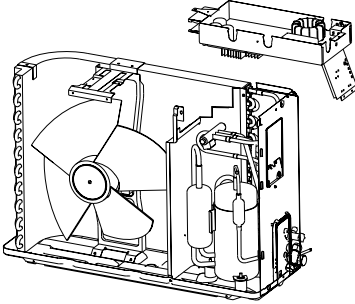
2. Disassembly of Vapor liquid separator		<ul style="list-style-type: none"> •Weld open two pipes connecting vapor liquid separator with pipe line with gas welding. •Remove vapor liquid separator.
3. Assembly of New vapor liquid separator		<ul style="list-style-type: none"> •Position accurately new vapor liquid separator. •Connect new vapor liquid separator with pipe line using gas welding. •Screw down two fixing screws again at the pothook.

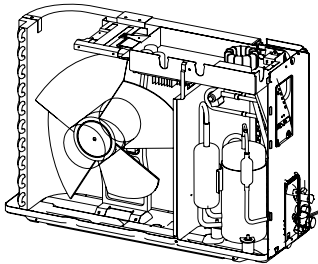
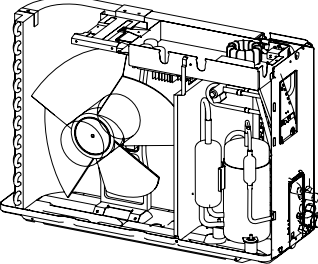
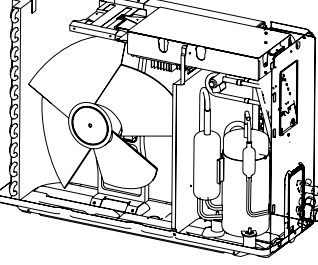
Disassembly and Assembly of Axial Flow Fan and motor

Remark: Make sure power supply of the unit is cut down before removal of axial flow fan and motor.

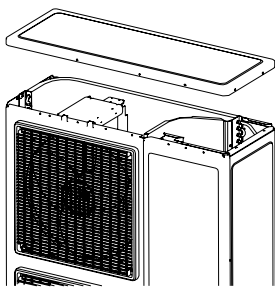
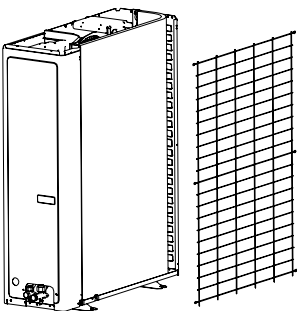
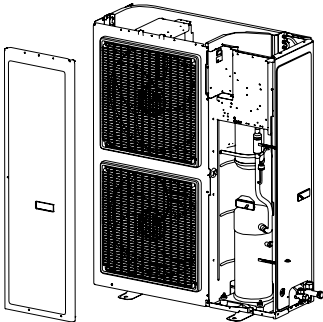
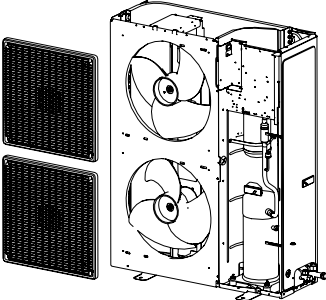
Step	Illustration	Handling Instruction
1. Disassembly of outer parts		<ul style="list-style-type: none"> •Handling Instruction
2. Disassembly of axial flow fan		<ul style="list-style-type: none"> •Disassemble outer parts of unit coping, panel(external casing), screen,etc. according to the discription above in order to disassemble axial flow fan and motor conveniently.

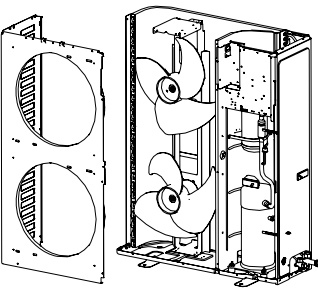
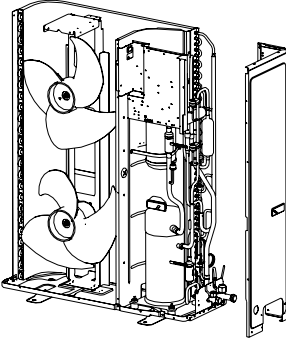
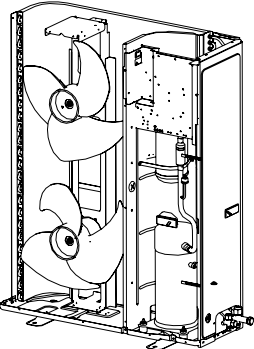
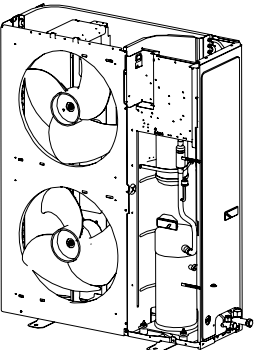
3. Disassembly of fan motor		<ul style="list-style-type: none"> ● Hold the fans without movement. ● Disassemble fixing nuts for the fans with wrench. ● Take down and remove fans from motor.
4. Assembly of new motor		<ul style="list-style-type: none"> ● Open the cover of electrical parts box. ● Loose the connecting plug for motor wires and pull out the wires through the hole. ● Disassemble the fixing screw on the motor support and remove the motor.
5. Assembly of new axial flow fan		<ul style="list-style-type: none"> ● Position accurately new motor on the motor support. ● Screw down the fixing screw to fasten the motor. ● Connect the motor wire through the hole with the corresponding position inside the electrical parts box and fasten the connecting plug. ● Close the cover and screw down the screw.
6. Assembly of outer parts		<ul style="list-style-type: none"> ● Position reliably the new fan on the motor axis. ● Hold the fans without movement. ● Screw down fixing screws for fan with wrench.

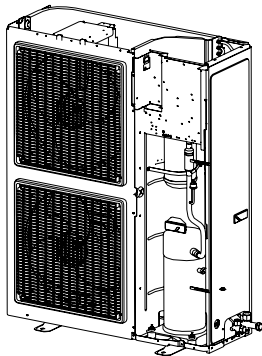
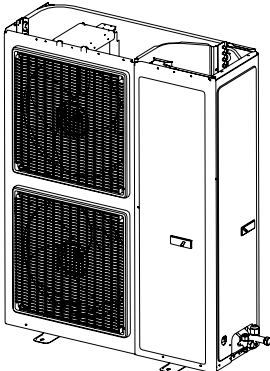
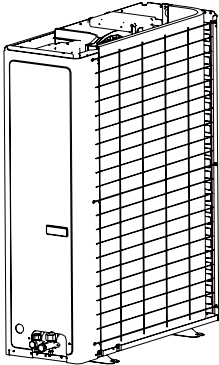
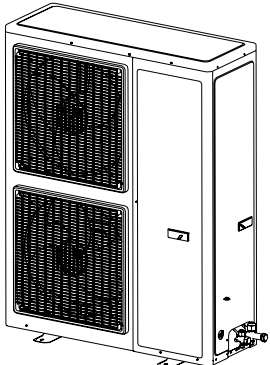
Disassembly and Assembly of electrical parts box		
Remark: Make sure power supply of the unit is cut down before removal of electrical parts box or electrical parts box modules.		
Step	Illustration	Handling Instruction
1. Disassembly of cover of electrical parts box		<ul style="list-style-type: none"> ●Cut off the power supply. ●Disassemble fixing screw between electrical parts box cover and the box with screwdriver ●Take away and remove the cover from electrical parts box.
2. Pull away the power supply wires for components like motor, etc.		<ul style="list-style-type: none"> ●Disassemble electrical components, like mainboard inside the electrical parts box connected with outer components (power-loaded wires for components like compressor, motor). ●Attention: Record right position for wire connection during disassembly of connecting wires.
3. Disassembly of electrical parts box modules	<p>Disassemble fixing screw of electric box</p> 	<ul style="list-style-type: none"> ●Disassemble fixing screws between electrical parts box and middle clashboard, motor support as well as right panel with screwdriver.
4. Removal of electrical parts box modules		<ul style="list-style-type: none"> ●Hold the bottom of electrical parts box and lift it upward to get rid of the clip on the middle clashboard. ●Remove electrical parts box modules.

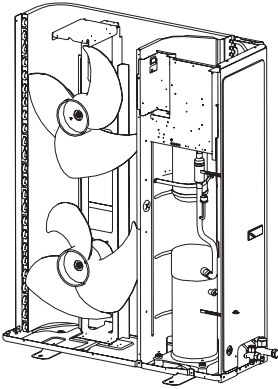
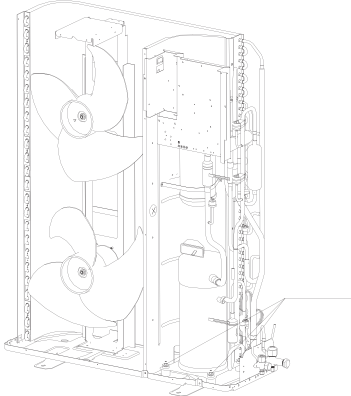
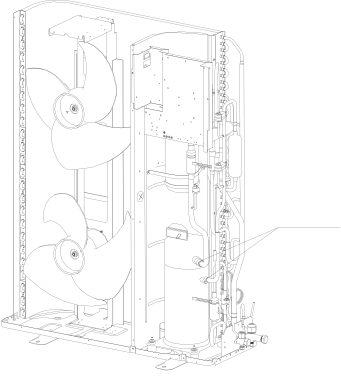
<p>5. Assembly of new electrical parts box modules</p>		<ul style="list-style-type: none"> ●Position accurately the new electrical parts box. ●Re-fasten the electrical parts box modules and screw down with screwdriver.
<p>6. Connection of power supply wires of each component</p>		<ul style="list-style-type: none"> ●Re-connect the connection wires of each components with right position according to the order of disassembly.
<p>7. Assembly of electrical parts box</p>		<ul style="list-style-type: none"> ●Assembly accurately the electrical parts box. ●Re-fasten and screw down the surrounding fixing screw with screwdriver.

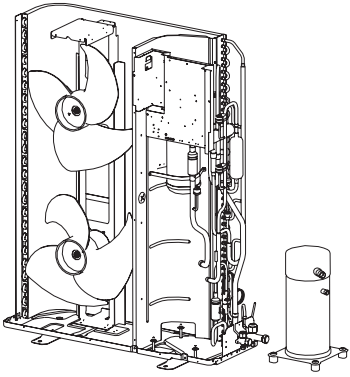
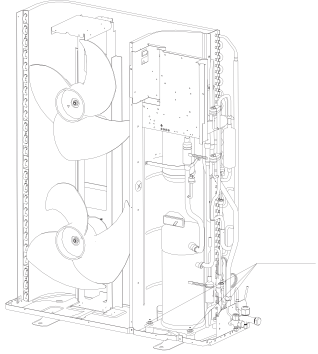
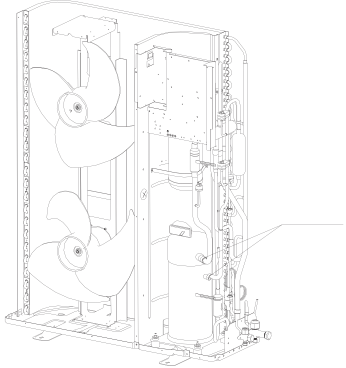
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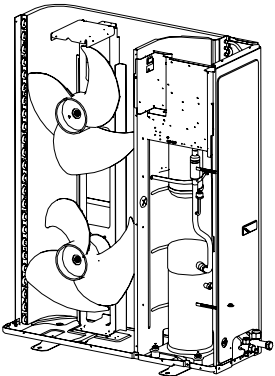
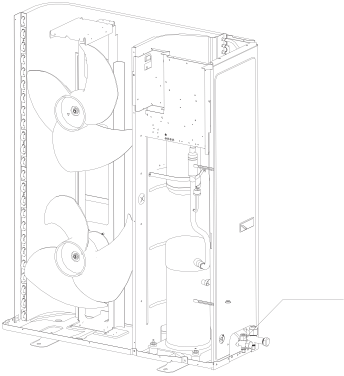
Disassembly and Assembly of external casing		
Remark: Make sure power supply of the unit is cut down before removal of external casing.		
Step	Illustration	Handling Instruction
1. Disassembly of coping		<ul style="list-style-type: none"> •Disassemble fixing screws surrounding the coping with screwdriver. •Remove coping from the unit.
2. Disassembly of screen		<ul style="list-style-type: none"> •Loose the fixing screws surrounding the screen with screwdriver. •Remove screen from the unit.
2. Disassembly of front panel		<ul style="list-style-type: none"> •Loose the fixing screws surrounding the front panel with screwdriver. •Remove the front panel from the unit.
3. Disassembly of panel grating		<ul style="list-style-type: none"> •Loose the fixing screws for the panel grating with screwdriver. •Take away and remove panel grating from the external casing.

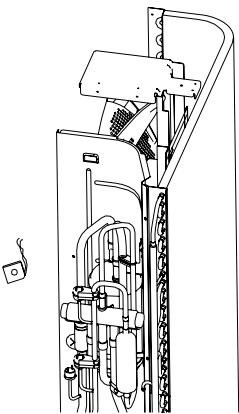
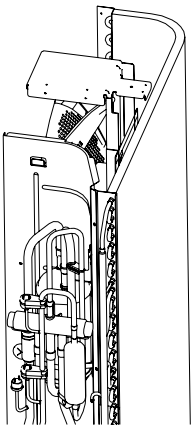
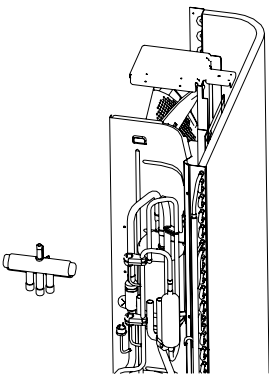
<p>4. Disassembly of external casing</p>		<ul style="list-style-type: none"> •Loose the fixing screws surrounding external casing with screwdriver. •Remove the external casing from the unit.
<p>5. Disassembly of back panel</p>		<ul style="list-style-type: none"> •Loose the fixing screws surrounding the back panel with screwdriver. •Remove the back panel from the unit.
<p>6. Assembly of new back panel</p>		<ul style="list-style-type: none"> •Position accurately the new back panel. •Screw down the surrounding fixing screws with screwdriver.
<p>7. Assembly of new external casing</p>		<ul style="list-style-type: none"> •Position accurately the new panel on the unit. •Screw down the surrounding fixing screws with screwdriver.

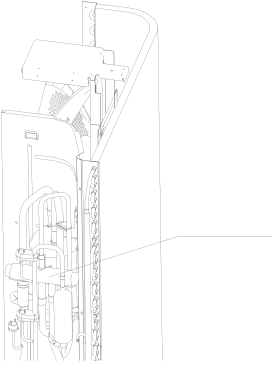
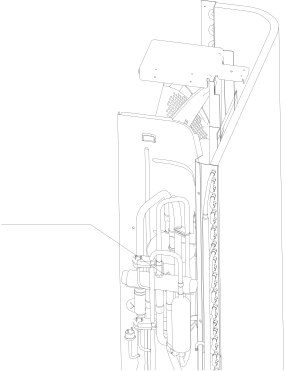
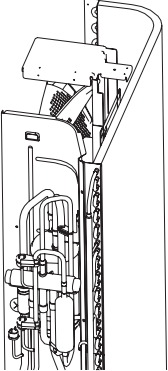
<p>8. Assembly of new panel grating</p>		<ul style="list-style-type: none"> •Position accurately the new panel grating on the unit panel. •Screw down the surrounding fixing screws with screwdriver.
<p>9. Assembly of new front panel</p>		<ul style="list-style-type: none"> •Position accurately the new front panel. •Screw down the surrounding fixing screws with screwdriver.
<p>10. Assembly of new screen</p>		<ul style="list-style-type: none"> •Position accurately the new screen. •Screw down the surrounding fixing screws with screwdriver.
<p>11. Assembly of new coping</p>		<ul style="list-style-type: none"> •Position accurately the new coping. •Screw down the surrounding fixing screws with screwdriver.

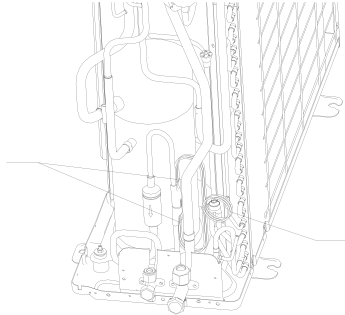
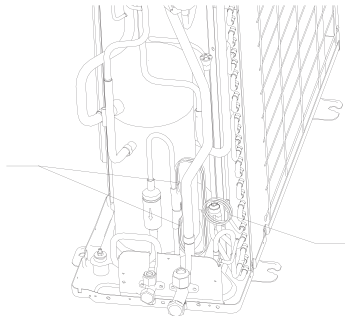
Disassembly and Assembly of Compressor		
Remark : Make sure there isn't any refrigerant in pipe system and the power supply is cut off before removal of the compressor..		
Step	Illustration	Handling Instruction
1. Disassembly of power supply wire		<ul style="list-style-type: none"> ●Loose the fixing screws for power supply wire. ●Pull away the power supply wire. <p>Attention: During removal of the power supply wire, mark wire color with the corresponding joint number in case of wrong connection.</p>
2. Disassembly of fixing nuts on compressor		<ul style="list-style-type: none"> ●Disassemble fixing nuts on compressor with wrench.
3. Disassembly of suction and exhaustion pipe		<ul style="list-style-type: none"> ●Heat the suction and exhaustion pipe with gas welding before removing compressor. ●Provide nitrogen protection during gas welding and the nitrogen pressure should be $0.5 \pm 0.1 \text{ kgf/cm}^2$ (relative pressure) . ●Please pay attention to heating in case that surrounding materials should be burnt by high temperature.

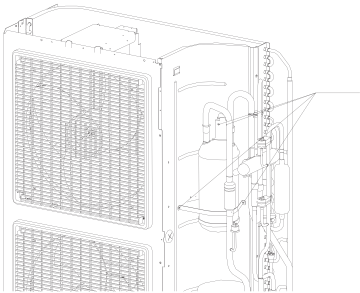
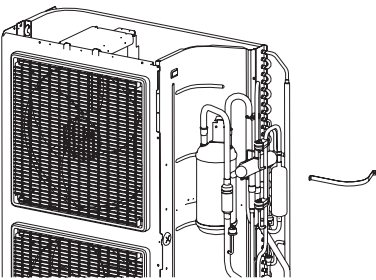
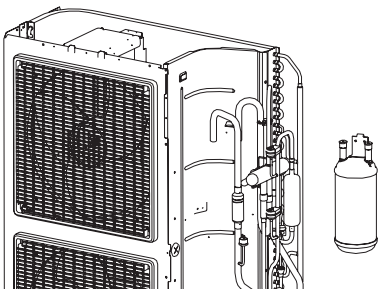
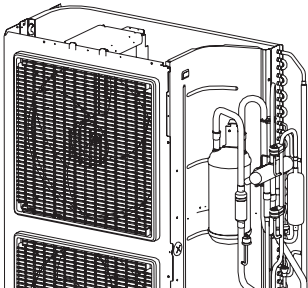
<p>4. Removal of compressor</p>		<ul style="list-style-type: none"> ●Remove compressor from underpan.
<p>5. Assembly of new compressor onto underpan</p>		<ul style="list-style-type: none"> ●Position accurately the new compressor. ●Screw down fixing nuts for compressor with wrench. ●Do not up-side-down compressor during assembly.
<p>6. Connection of suction and exhaustion pipe with pipeline system</p>		<ul style="list-style-type: none"> ●Connect compressor with other pipeline using gas welding. ●Provide nitrogen protection during gas welding and the nitrogen pressure should be $0.5 \pm 0.1 \text{ kgf/cm}^2$ (relative pressure) . ●Please pay attention to heating in case that surrounding materials should be burnt by high temperature.

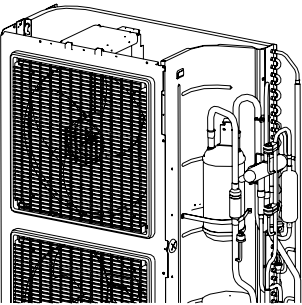
<p>7. Connection power supply wires of compressor</p>		<ul style="list-style-type: none"> ● Assemble the power supply wires onto right position according to the order of disassembly. ● Screw down the fixing screw for the power supply wires with screwdriver.
<p>8. Vacuum pumping and cooling medium filling through valve</p>		<ul style="list-style-type: none"> ● Pump the system vacuum through valve before refill cooling medium. ● Volume of refilling should be in accordance with the requirement on the unit nameplate.

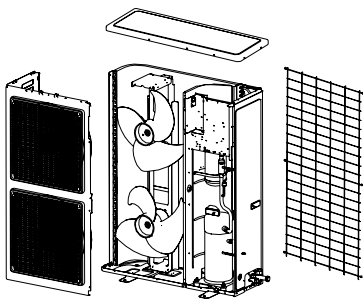
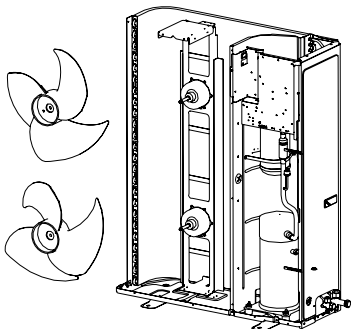
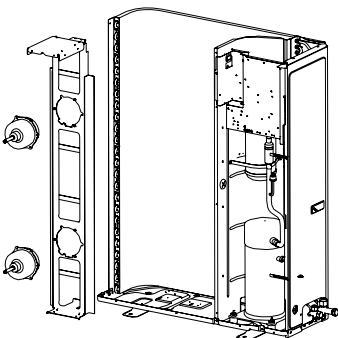
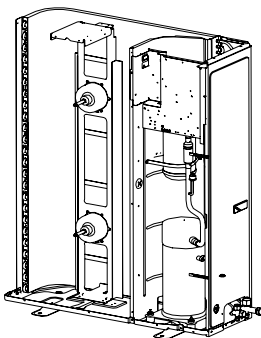
Disassembly and Assembly of 4-way valve		
Remark: Make sure there isn't any refrigerant in pipe system and the power supply is cut off before removal of 4-way valve.		
Step	Illustration	Handling Instruction
1. Disassembly of solenoid valve		<ul style="list-style-type: none"> ●Cut off power supply and reclaim cooling medium properly. ●Disassemble the assembling screw for solenoid valve. ●Disassemble solenoid valve with wrench.
3. Disassembly of 4-way valve		<ul style="list-style-type: none"> ●Heat connection pipes for 4 pipes of 4-way valve with gas welding before removal of 4-way valve. ●Record the direction of the 4-way valve and installation position of each pipe before welding away 4-way valve.
4. Removal of 4-way valve		<ul style="list-style-type: none"> ●Remove the old 4-way valve from the pipe line.

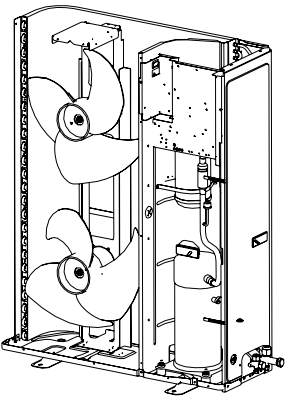
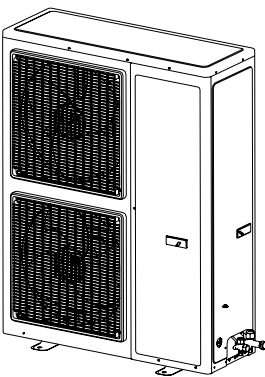
<p>5. Assembly of New 4-way valve</p>		<ul style="list-style-type: none"> ●Position accurately the new 4-way valve. ●Connect new 4-way valve with pipe line. ●Wrap the valve with wet cloth when welding 4-way valve in case sliding block inside the valve should be burnt and water flow into the pipe line. ●Welding with nitrogen and the nitrogen pressure shall be $0.5 \pm 0.1 \text{ kgf/cm}^2$ (relative pressure).
<p>6. Assembly of solenoid valve</p>		<ul style="list-style-type: none"> ●Assemble solenoid valve onto the new 4-way valve in order of disassembly.
<p>7. Examination of System and cooling medium filling</p>		<ul style="list-style-type: none"> ●Pump vacuum and fill cooling medium if the system leak test passes.

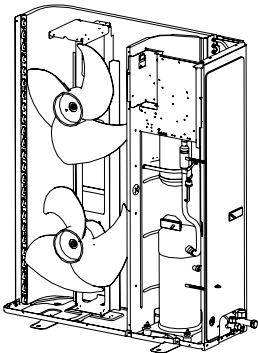
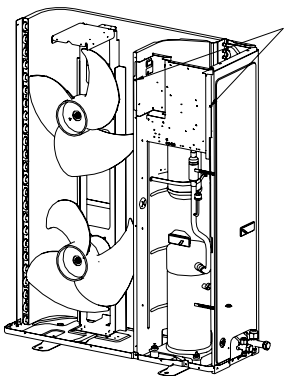
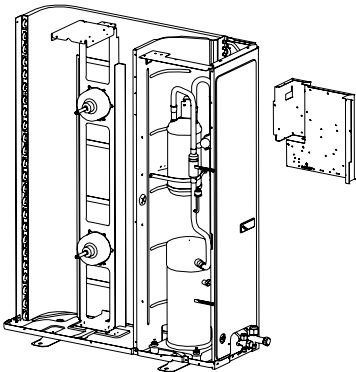
Disassembly and Assembly of capillary		
Remark: Make sure there isn't any refrigerant in pipe system and the power supply is cut off before removal of the capillary.		
Step	Illustration	Handling Instruction
1. Disassembly of Capillary		<ul style="list-style-type: none"> ●Weld two welding points connecting capillary with other pipe lines. ●Remove capillary.
2. Assembly of New capillary		<ul style="list-style-type: none"> ●Assemble new capillary. ●Weld the points connected with other pipe lines. ●Re-conduct the system leak test. Pump vacuum and fill the cooling medium.

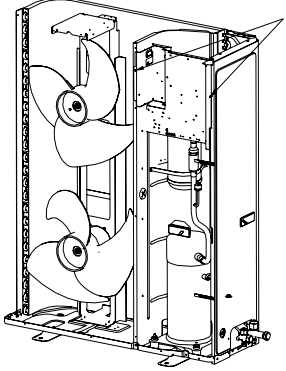
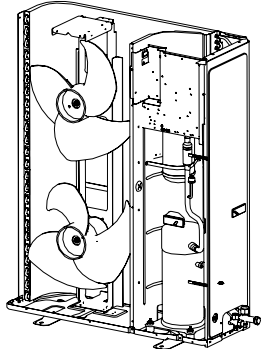
Disassembly and Assembly of Vapour Liquid Separator		
Remark: Make sure there isn't any refrigerant in pipe system and the power supply is cut off before removal of the vapor liquid separator.		
Step	Illustration	Handling Instruction
1. Disassembly of retaining clips for liquid reservoir		<ul style="list-style-type: none"> Disassemble the fixing screws on the pothooks and retaining clips of the reservoir with screwdriver.
2. Removal of retaining clips for liquid reservoir		<ul style="list-style-type: none"> Remove the retaining clips for liquid reservoir.
3. Disassembly of vapor liquid separator		<ul style="list-style-type: none"> Weld open two pipes connecting vapor liquid separator with pipe line with gas welding. Remove vapor liquid separator.
4. Assembly of new vapor liquid separator		<ul style="list-style-type: none"> Position accurately new vapor liquid separator. Connect new vapor liquid separator with pipe line using gas welding.

<p>5. Assembly of retaining clips for liquid reservoir</p>		<ul style="list-style-type: none"> ● Re-assemble the retaining clips for liquid reservoir and screw down the fixing screw
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Disassembly and Assembly of Axial Flow Fan and motor		
Remark: Make sure power supply of the unit is cut down before removal of axial flow fan and motor.		
Step	Illustration	Handling Instruction
1. Disassembly of outer parts		<ul style="list-style-type: none"> ●Disassemble outer parts of unit coping, panel(external casing), screen,etc. according to the discription above in order to disassemble axial flow fan and motor conveniently.
2. Disassembly of axial flow fan		<ul style="list-style-type: none"> ●Hold the fans without movement. ●Disassemle fixing nuts for the fans with wrench. ●Take down and remove fans from motor.
3. Disassembly of fan motor		<ul style="list-style-type: none"> ●Loose the connecting plug for motor wires and pull out the wires through the hole. ●Disassemble fixing screws for motor support and remove the motor support. ●Disassemble the fixing screws for motor on the motor support and remove the motor.
4. Assembly of new motor		<ul style="list-style-type: none"> ●Position accurately the new motor on the motor support. ●Screw down the fixing screw for motor. ●Assemble the whole motor support onto the underpan using fixing screws. ●Connect the motor wire through the hole with the corresponding position

		inside the electrical parts box and fasten the connecting plug.
5. Assembly of new axial flow fan		<ul style="list-style-type: none"> •Position reliably the new fan on the motor axis. •Hold the fans without movement. •Screw down fixing screws for fan with wrench.
6. Assembly of outer parts		<ul style="list-style-type: none"> •Re-assemble the outer parts of unit coping, panel (external casing) and screen, etc. according to the discription before.



Disassembly and Assembly of electrical parts box		
Remark: Make sure power supply of the unit is cut down before removal of electrical parts box or electrical parts box modules.		
Step	Illustration	Handling Instruction
1. Pull away the power supply wires for components like motor, etc.		<ul style="list-style-type: none"> Disassemble electrical components, like mainboard inside the electrical parts box connected with outer components (power-loaded wires for components like compressor, motor). <p>Attention: Record right position for wire connection during disassembly of connecting wires.</p>
2. Disassembly of electrical parts box modules		<ul style="list-style-type: none"> Disassemble fixing screws between electrical parts box and middle clashboard, motor support as well as right panel with screwdriver.
3. Removal of electrical parts box modules		<ul style="list-style-type: none"> Remove electrical parts box modules.


<p>4. Assembly of new electrical parts box modules</p>		<ul style="list-style-type: none"> ●Position accurately the new electrical parts box. ●Re-fasten the electrical parts box modules and screw down with screwdriver.
<p>5. Connection of power supply wires of each component</p>		<ul style="list-style-type: none"> ●Re-connect the connection wires of each components with right position according to the order of disassembly.


4.2 Indoor Unit

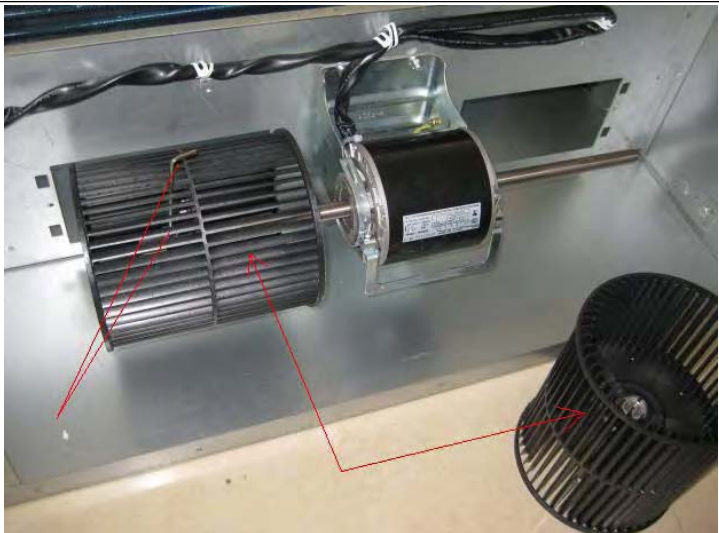


4.2.1 Duct Type


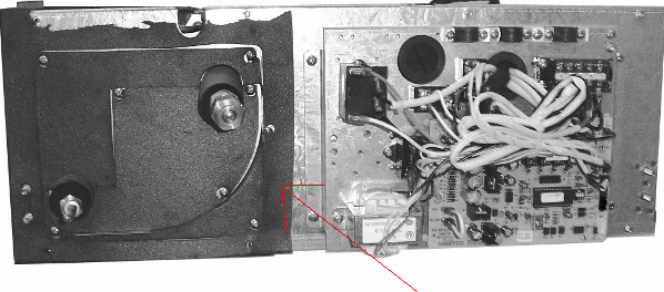
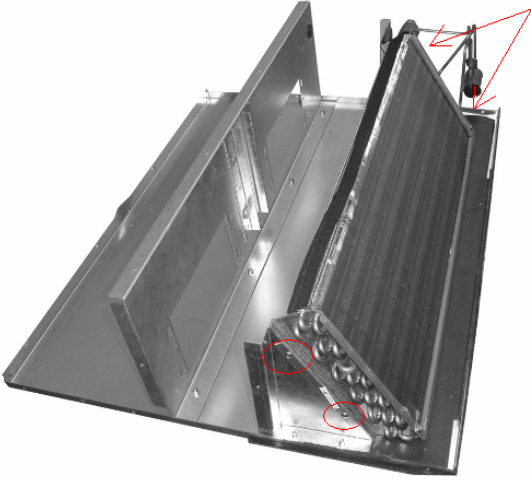

ASDU-09A, ASDU-12A, ASDU-18A Disassembly procedure

Disassembly of External Casing of Group		
Remark: Make sure the power supply is cut off before removal and protect all the parts during disassembly, especially the screws that should be collected together, in case of missing them.		
Step	Illustration	Handling Instruction
1. Disassembly of filter screen for back return air		<ul style="list-style-type: none"> ●Pull two filter screens for back return air (As shown in the graph, the arrow represents filter screens for back return air)
2. Disassembly of side panel for back return air		<ul style="list-style-type: none"> ●Disassemble the fastening screws for back return air and take away the back return air side panel (as shown in the graph).
3. Disassembly of cover plate for return air		<ul style="list-style-type: none"> ●Disassemble the fastening screws for return air cover plates and take away the return air cover plate (As shown in the graph, the arrow represents cover plates for return air)
4. Disassembly of cover plate		<ul style="list-style-type: none"> ●Disassemble the fastening screws for cover plate and take away the cover plate (As shown in the graph, the arrow represents cover plates)


Disassembly of water-containing plate		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Removal of water-containing plate		<ul style="list-style-type: none"> Disassemble the fastening screws for water-containing plate and take away the water-containing plate (As shown in the graph, the arrow represents water-containing plate)



Disassembly of fans and motors		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly, especially the fastening screws for fans.		
Step	Illustration	Handling Instruction
1. Disassembly of front and back scroll cases		<ul style="list-style-type: none"> Disassemble the fastening screws for scroll cases and take away the front and back scroll cases (As shown in the graph, the arrow represents front and back scroll cases)




<p>2. Disassembly of centrifugal fan</p>		<ul style="list-style-type: none"> ●Disassemble the fastening screws for fans with inner hexagonal. Remove the centrifugal fan. (As is shown in Graph 7, the line without an arrow represents inner hexagonal and the position of fastening screws under its influence, and arrow represents centrifugal fan.)
<p>3. Disassembly of motor support module</p>		<ul style="list-style-type: none"> ●Disassemble the fastening screws for motor support and take away the motor support modules (As shown in the graph, the arrow represents motor support)
<p>4. Disassembly of motor</p>		<ul style="list-style-type: none"> ●Disassemble the connecting wires for motor inside the electrical parts box and remove the motor.

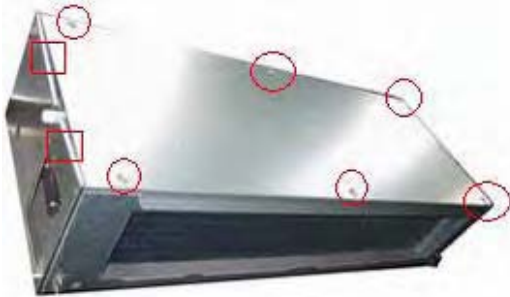

Disassembly of evaporator		
Remark: Make sure the power supply is cut off and protect the copper tube and aluminum fin. If the time for disassembly shall be long, put the copper tube under pressurized condition.		
Step	Illustration	Handling Instruction
1. Disassembly of right panel		<ul style="list-style-type: none"> Disassemble the fastening screws on the right panel and remove right panel(as is shown in the graph, arrow represents right panel).
2. Disassembly of left panel		<ul style="list-style-type: none"> Disassemble the fastening screws on the left panel and remove left panel(as is shown in the graph, arrow represents left panel).
3. Disassembly of evaporator		<ul style="list-style-type: none"> Disassemble the fastening screws on the evaporator. (As is shown in the graph, in the circle there are two fastening screws and in the direction of arrow, two more.) Remove the evaporator.
4. Disassembly of evaporator support		<ul style="list-style-type: none"> Disassemble the self-tapping screw on the evaporator support and remove the evaporator support.(As is shown in the graph, in the circle there are two fastening screws and in the similar position in the direction of arrow, two more.)



ASDU-24A, ASDU-36A, ASDU-42A, ASDU-48A, ASDU-60A Disassembly procedure



Disassembly of filter screen for return air		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly. Do not put filter screen near the high temperature heat source.		
Step	Illustration	Handling Instruction
Disassembly of filter screen for return air		<ul style="list-style-type: none"> ●Compress the filter screen for return air down on the guide slot sponge, and remove according to the direction shown by the arrow. There are 2 filter screen for return air.

Disassembly of electrical parts box cover panel and electrical parts box		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly, especially the electrical components. Do not dampen or hit them.		
Step	Illustration	Handling Instruction
1. Disassembly of electrical parts box cover panel		<ul style="list-style-type: none"> ●Disassemble the screw according to the position shown in the circle and the box and remove the electrical parts box in the direction of the arrow.
2. Disassembly of electrical parts box		<ul style="list-style-type: none"> ●Disassemble the fastening screw and remove the electrical parts box. (As is shown in the graph, there are 2 fastening screws in the circle and the screws in the direction of arrow shall be disassembled too.)



Disassembly of drainage pump		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Disassembly of fastening screws on seal-plates of inner panels and the drainage pipe		<ul style="list-style-type: none"> Disassemble the fastening screws on seal-plates of inner panels and the pump drainage pipe. Remove the seal-plates.(As is shown in the graph, the circle represents fastening screws on seal-plates and box the fastening screws on drainage pipe. All the 8 screws shall be disassembled.)
2. Disassembly of fastening screws on the drainage pump		<ul style="list-style-type: none"> Disassemble the fastening screws on the drainage pump. (As is shown in the graph, the circle represents the position of screws.)
3. Removal of condensed water drainage pump		<ul style="list-style-type: none"> Removed condensed water drainage pump is shown in the graph.

Disassembly of water-containing plate		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Disassembly of cover plate		<ul style="list-style-type: none"> Disassemble the fastening screws on the cover plate and remove the cover plate. (As is shown in the graph, circle represents 6 fastening screws under the cover plate and the box represents two fastening screws on water-containing plate symmetrically arranged both on left and right.)
2. Disassembly of water-containing plate		<ul style="list-style-type: none"> Disassemble the fastening screws on the water-containing plate, pull upward and remove the water-containing plate. Disassembled water-containing plate is shown in the graph.


Disassembly of fan and motor		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Disassembly of fan		<ul style="list-style-type: none"> Disassemble the fixing screws on the fan components. (As is shown in Graph 10, circle represents 6 screws.)
2. Disassembly of motor		<ul style="list-style-type: none"> Disassemble the fastening screws on the fan and motor. Remove the fan. (As is shown in Graph 11, box represents screws.)


Disassembly of evaporator		
Remark: Make sure the power supply is cut off and protect the copper tube and aluminum fin. If the time for disassembly shall be long, put the copper tube under pressurized condition.		
Step	Illustration	Handling Instruction
1. Disassembly of fixing screws on the side panels of evaporator		<ul style="list-style-type: none"> Disassemble the fastening screw connecting left and right side panels on the evaporator and the upper cover plate. (As is shown in the arrow's direction in Graph 12.)
2. Disassemble fastening screws connecting evaporator valve seal-plate and joint flange		<ul style="list-style-type: none"> Disassemble the fastening screws on the valve seal-plate and remove the valve seal-plate. Disassemble the fastening screws on the evaporator's joint flange. (As is shown in the graph, box represents fastening screws on seal-plates while circle the fastening screws on joining flange.)

3. Removal of evaporator		<ul style="list-style-type: none"> ●Remove the evaporator. Removed evaporator is shown in the graph.
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Disassembly of External casing cabinet		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
1. Disassembly of fastening screws between cover plates		<ul style="list-style-type: none"> ●Disassemble the fastening screws between right and left panels and upper cover plates. Disassemble right and left panels. (As is shown in the graph, circle represents screws.)
2. Disassembly of external casing cabinet		<ul style="list-style-type: none"> ●Disassembled external casing cabinet is shown in the graph.



4.2.2 Ceiling Type

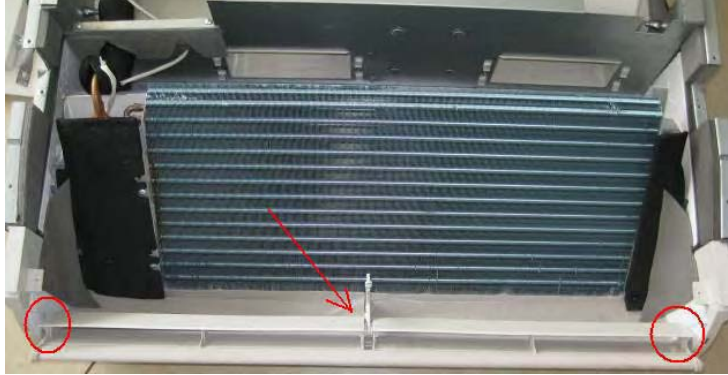
Disassembly of panel grating module		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly. Do not put filter screen near the high temperature heat source.		
Step	Illustration	Handling Instruction
Disassembly of panel grating module		<ul style="list-style-type: none"> ●Move down the clip of the panel grating modules until the panel grating is open. (As is shown in the graph, arrow represents the position of bottoms. There are two clips for each grating.)


Disassembly of right and left finishing plates		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly. Do not scratch the outer parts.		
Step	Illustration	Handling Instruction
Disassembly of right and left finishing plates		<ul style="list-style-type: none"> ●Disassemble the screws as shown in the graph with screwdriver and then push upward to remove the right and left finishing plates.(As is shown in the graph, arrow represents the position of screws.)

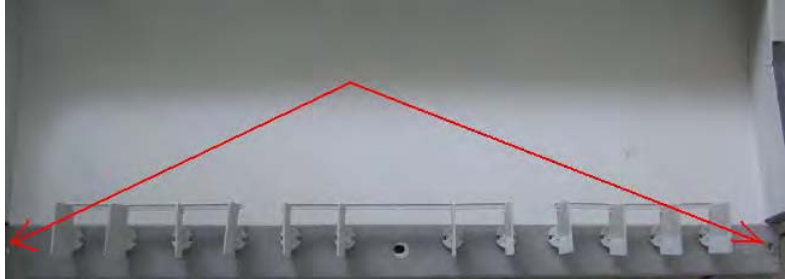
Disassembly of panel parts		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly. Do not scratch the outer parts.		
Step	Illustration	Handling Instruction


Disassembly of panel parts		<ul style="list-style-type: none">●Disassemble the 8 screws shown by the arrow in the graph with screwdriver (two on both right and left and 4 in the front) and then remove the panel parts.
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Disassembly of electrical parts box components		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly, especially the components inside the box in case of water and hit.		
Step	Illustration	Handling Instruction
1. Disassembly of electrical parts box cover panel		<ul style="list-style-type: none">●Disassemble 2 screws as shown by the arrow in the graph on left and remove the electrical parts box cover panel.
2. Disassembly of electrical parts box modules.		<ul style="list-style-type: none">●Disassemble 4 screws as shown by the arrow in the graph on left (two screws on both sides) and remove the electrical parts box modules and the wires.


Disassembly of air deflecting plate modules		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly, especially the joints of the air deflecting plate.		
Step	Illustration	Handling Instruction
Disassembly of air deflecting plate modules		<ul style="list-style-type: none"> Remove the air deflecting plates from the air deflecting plate support assembly, and then remove both ends from the air sweeping motor joint (As is shown in the graph, arrow represents the support assembly and circle the air sweeping motor joint.)


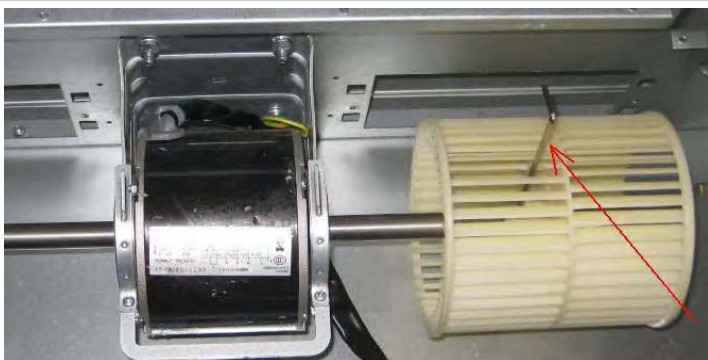

Disassemble of water-containing plate modules		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
Disassemble of water-containing plate modules		<ul style="list-style-type: none"> Disassemble 4 screws shown in the graph with screwdriver (two screws on both left and right), and remove the water-containing plate modules.

Disassembly of fixing plate modules for air sweeping fans		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly, especially the connection part of air sweeping fans.		
Step	Illustration	Handling Instruction
Disassembly of fixing plate modules for air sweeping fans		<ul style="list-style-type: none"> Disassemble the screws on both ends of fixing plate modules for air sweeping fans (1 for both sides) and remove the fixing plate modules for air sweeping fans from the air deflecting support.


Disassembly of evaporator components		
Remark: Make sure the power supply is cut off and protect the copper tube and aluminum fin. If the time for disassembly shall be long, put the copper tube under pressurized condition.		
Step	Illustration	Handling Instruction
Disassembly of evaporator components		<ul style="list-style-type: none"> Disassemble the screws as shown by the arrow in the graph with screwdriver. (There are 4 screws on left and right of the evaporator and 2 on evaporator outlet press plate modules)

Disassembly of fixing plate modules for air sweeping fans		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
Disassembly of fixing plate modules for air sweeping fans		<ul style="list-style-type: none"> Disassemble the screws shown in the graph with screwdriver.


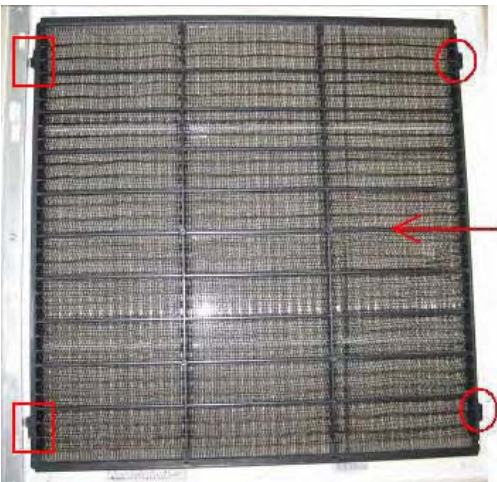
Disassembly of right and left polystyrene foam plates modules		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly. Do not heat or hit polystyrene foam modules.		
Step	Illustration	Handling Instruction
Disassembly of right and left polystyrene foam plates modules		<ul style="list-style-type: none"> Remove the right and left polystyrene foam plates modules in the direction given by the graph.



Disassembly of fan and motor components		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly, especially the fastening screws for fans.		
Step	Illustration	Handling Instruction
1. Disassembly of front and back scroll cases		<ul style="list-style-type: none"> ●Press the buckle at the joints of front and back scroll cases with hands and pull upward to remove the front scroll case. Then remove the screws on the back scroll case. Lift the buckle of back scroll case with hands and remove it.(As is shown in the graph, circle represents 2 screws on left and right.)
2. Disassembly of fans		<ul style="list-style-type: none"> ●Disassemble the fixing screws of fan wheel with inner hexagonal and remove the wheel. The inner hexagonal and its direction of effect are shown by the arrow in the graph.
3. Disassembly of bearing fixing plates		<ul style="list-style-type: none"> ●Disassemble 4 screws on the bearing fixing plates with screwdriver. (As shown in the box in the graph)


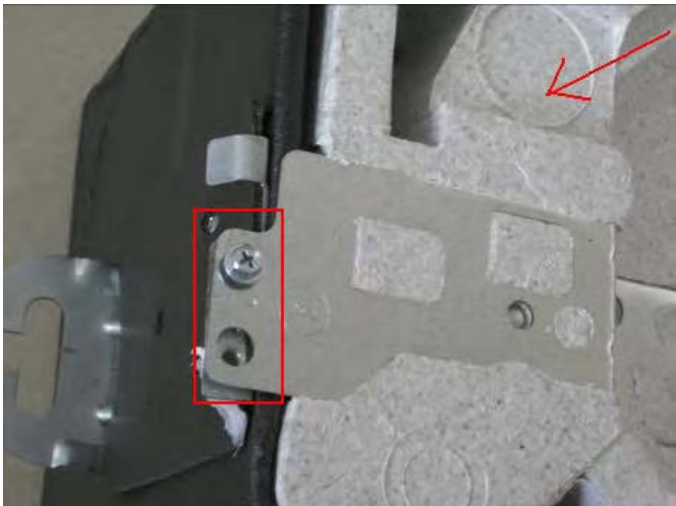
4. Disassembly of motor		<ul style="list-style-type: none">●Disassemble the bolt shown in the graph with screwdriver and remove the motor press plate and retaining clip for motor.
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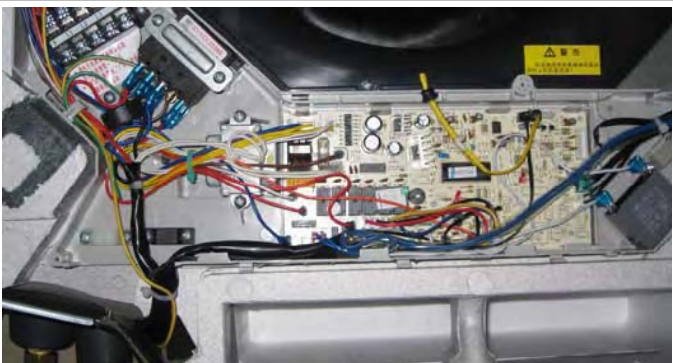
Disassembly of right and left fixing plates		
Remark: Make sure the power supply is cut off before disassembling and protect all the parts during disassembly.		
Step	Illustration	Handling Instruction
Disassembly of right and left fixing plates		<ul style="list-style-type: none">●Disassemble the bolts on right and left fixing plates with tools. (As is shown by the arrow in the graph.)

4.2.3 Cassette Type


Disassembly of panel grating and filter screen		
Remark: Cut off the power supply and make sure the panel grating in good condition during assembly.		
Step	Illustration	Handling Instruction
1. Disassembly of grating		<ul style="list-style-type: none"> ● Push the right and left clips on the panel to the middle and pull upward at the same time. Pull backward when at 45°. (The position of clips is shown by the arrow in the graph.)
2. Disassembly of filter screen		<ul style="list-style-type: none"> ● As directed by the graph, push two clips represented by circles in the direction of arrow with hands. Take filter screen off the pothook represented by the box when it becomes loose. Remove the filter screen.

Disassembly of panels		
Remark: Cut off the power supply and make sure the panels and angular shell in good condition.		
Step	Illustration	Handling Instruction
1. Disassembly of angular shell		<ul style="list-style-type: none"> ●Pull angular shell outside with hands and remove it.
2. Disassembly of screws		<ul style="list-style-type: none"> ●Disassemble the screws with screwdriver and loose the fixing clip on the panels. (The position of screws is represented by the arrow.) ●There are 4 fixing clips on panel's four corners. When loosed completely, panel shall be removed by pulling upward.

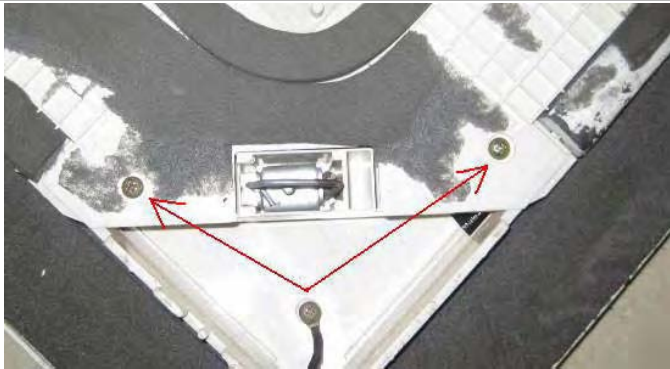
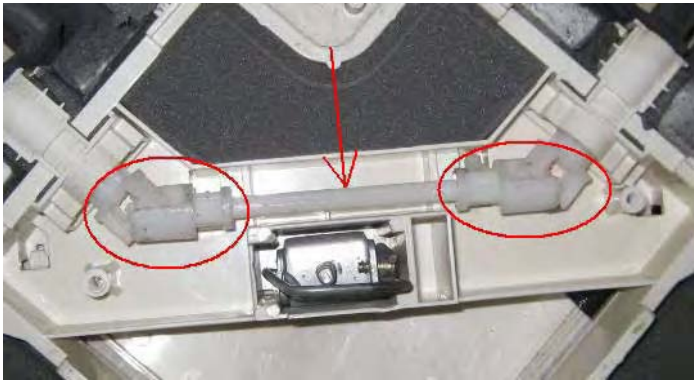
Disassembly of water-containing plate		
Remark: Cut off the power supply and make sure the power supply wires, signal wires and water-containing plate in good condition.		
Step	Illustration	Handling Instruction
1. Disassembly of cover panel of electrical parts box and flow deflecting ring		<ul style="list-style-type: none"> Disassemble the screws on the electrical parts box cover panel and flow deflecting ring. Remove the electrical parts box and the power supply wires and signal wires inside the electrical parts box connecting with the electrical components under the water-containing plate.
2. Disassembly of water-containing plate		<ul style="list-style-type: none"> Disassemble the screws on the four corners and pull outside the water-containing plate. (As is shown in the graph, arrow represents the water-containing plate. The position of screws are shown in the box.)

Disassembly of electrical parts box		
Remark: Cut off the power supply and make sure the power supply wires, signal wires and electrical parts box in good condition.		
Step	Illustration	Handling Instruction
Disassembly of electrical parts box		<ul style="list-style-type: none"> Disassemble 4 assembling screws and pull upward to remove the electrical parts box.

Disassembly of fan		
Remark: Cut off the power supply and make sure the fan is in good condition and shape.		
Step	Illustration	Handling Instruction
Disassembly of fan		<ul style="list-style-type: none"> Disassemble the nuts with wrench and pull upper side to remove the fan (The position of washer nuts is shown by the arrow in the graph.).

Disassembly of motor		
Remark: Cut off the power supply and make sure the motor is in good condition.		
Step	Illustration	Handling Instruction
Disassembly of motor		<ul style="list-style-type: none"> Disassemble the screws with wrench and pull upper side to remove the motor.

Disassembly of air-deflecting motor		
Remark: Make sure the air-deflecting motor in good condition and the power supply is cut off.		
Step	Illustration	Handling Instruction
Disassembly of air-deflecting motor		<ul style="list-style-type: none"> Disassemble two fitting screws on the air-deflecting motor and remove the motor.

Disassembly of connection rod modules on air-deflecting plate		
Remark: Make sure the air-deflecting plate in good condition and the power supply is cut off.		
Step	Illustration	Handling Instruction
1. Disassembly of screws		<ul style="list-style-type: none"> Remove part of the insulating sponge on four corners on the panel and remove the two exposed screws. The connection rod modules on the air-deflecting plate shall be seen. (The position of screws is shown in the graph.)
2. Disassembly of connection rod module		<ul style="list-style-type: none"> Pull up the connection rod and separate the connection rod and connection rod modules with hands. Disassemble the connecting screws with screwdriver. (As is shown in the graph, arrow represents the connection rod and circle the universal joints.)

PARTS GUIDE

UNI ON/OFF

**CASSETTE, FLOOR&CEILING, DUCT UNITS
OUTDOOR UNITS**

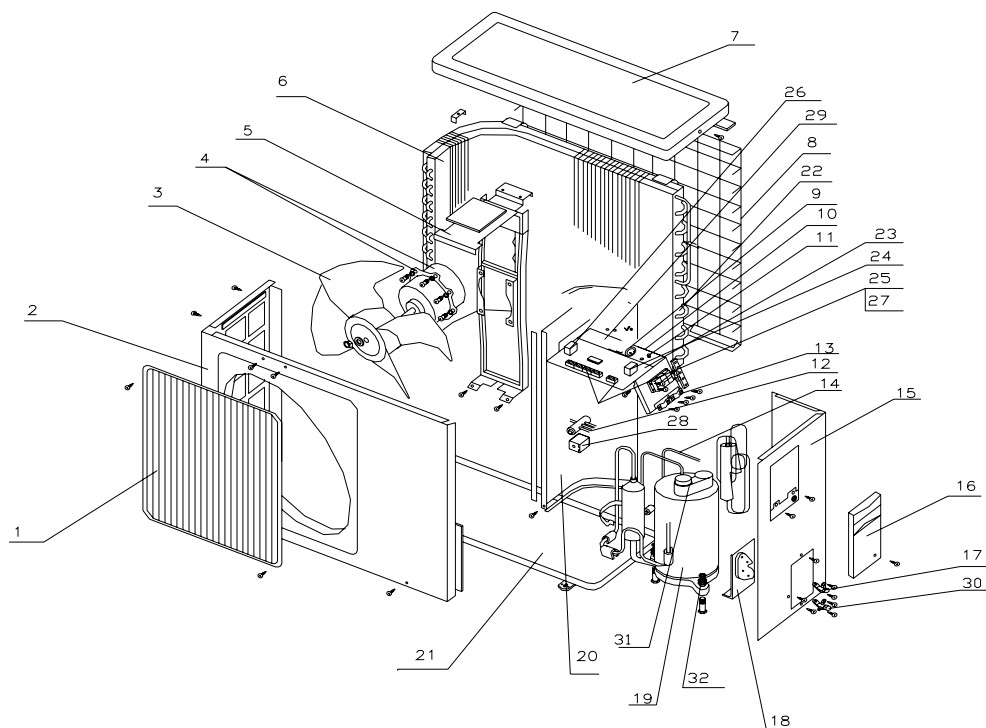


5 EXPLODED VIEWS AND PART LIST

5.1 Outdoor Unit

1) Model: ASGE-09A, ASGE-09A WK; ASGE-12A, ASGE-12A WK; ASGE-18A, ASGE-18A WK;

Exploded View



No	Description	Part Code	Note		Qty	Price Code
MODEL: ASGE-09,12,18A and ASGE-09,12,18A WK						
1	panel grill	22413431			1	AL
2	panel	01533012			1	AU
3	axial flow fan(propeller fan)	10333413	9,18		1	AN
		10333414	12		1	AM
4	Motor	15013067	9		1	AX
		15013071	12,18		1	AX
					1	AX
5	motor support	01703068	9		1	AN
		01703020	12		1	AN
		01703391	18		1	AN
6	Condenser Assy	01125241	9		1	BP
		01125244	12		1	BR
		01125252	18		1	BT
7	Top Cover	01253443			1	AN
8	protection grill nets	01473014	9,12		1	AL
		01473023	18		1	AL
9	Capacitor	33010743	9,12		1	AK
		33000039	18		1	AM
10	Electric Box	01395506	9	without WK	1	AH
		01395542	9	WK	1	AH
		01395504	12	without WK	1	AH
		01395543	12	WK	1	AH
		01395505	18	without WK	1	AH
		01395549	18	WK	1	AH
11	Isolation Washer C	70410523			1	AC
12	4-way Valve Coil	430004022	9		1	AX
		430004032	12,18		1	BA
13	Wire Clamp	71010103			1	AB
14	discharge pipe	04635715	9		1	BD
		04635713	12		1	BD
		04635714	18		1	BD
	pressure switch	4602001544	ALL	WK	1	AL
15	Right Side Plate	0130200401			1	AM
16	Handle	26233433			1	AE
17	Liquid Valve	07100003	9,12		1	AG
		07100004	18		1	AG
18	Valve Support	01713041			1	AD

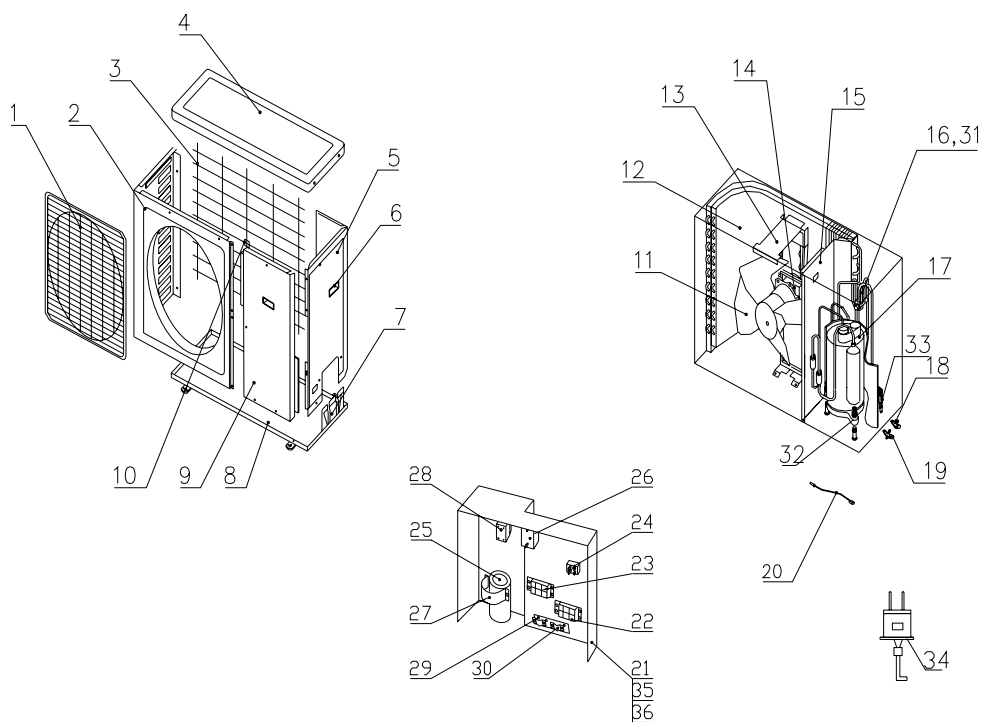
PART.1

PART.2

No	Description	Part Code	Note		Qty	Price Code
MODEL: ASGE-09,12,18A and ASGE-09,12,18A WK						
19	Compressor ASG108CV-B7AT	00120145	9		1	BN
	Compressor ASL145SV-C7LU	00120139	12		1	BP
	Compressor ASH232SV-C8LU	00103702	18		1	BS
20	inner cover	01233381			1	AH
21	chassis	01213429			1	AU
22	Temp sensor	3900012121			1	AD
23	Main PCB WZ4C352	3022403301	ALL	without WK	1	BA
		30224058	ALL	WK	1	BA
	Main PCB ZS401D	30224211	ALL	WK	1	AZ
24	Transformer 57X25D	4311024001			1	AL
25	Terminal Board	420111531			1	AD
26	AC Contactor CJX9B-25S/D	44010245			1	AT
27	Terminal Board 2-8	42011103			1	AD
28	Accessory of 4-way Valve Coil	430004002			1	AM
29	Capacitor of motor	33010026	9		1	AE
		33010027	12,18		1	AE
30	Gas Valve	07100005	9		1	AG
		07100006	12,18		1	AG

The data are subject to change without notice.

2) Model: ASGE-24A, ASGE-24A WK;
Exploded Views

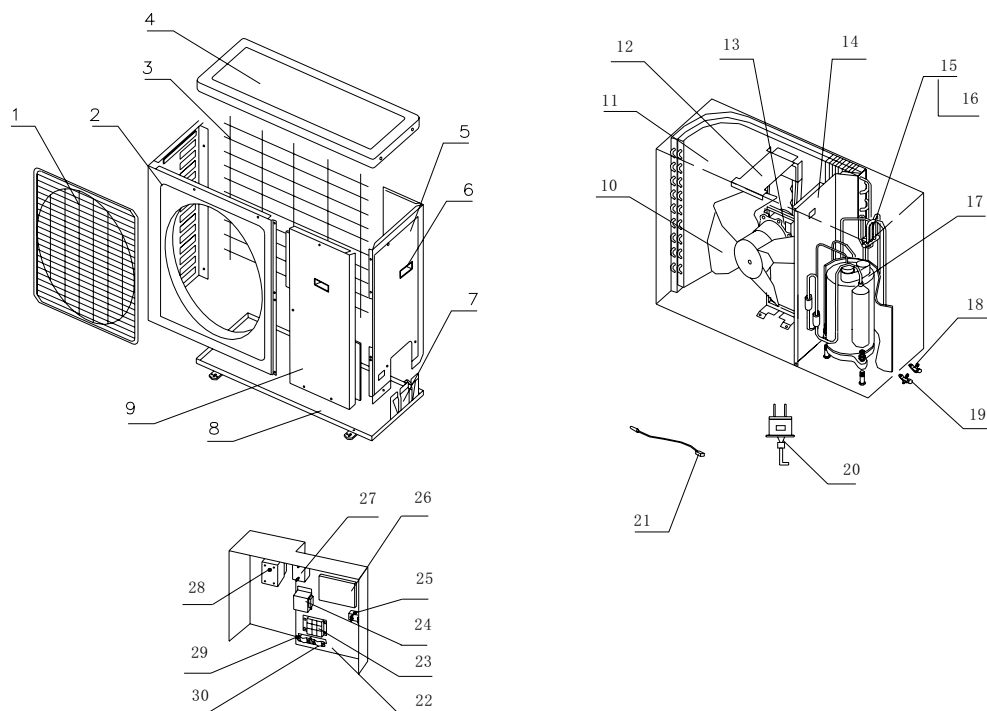


No	Description	Part Code	Note	Qty	Price Code
MODEL: ASGE-24A, ASGE-24A WK					
1	Front Panel Grill	22414102		1	AL
2	Front Plate	01433017P		1	AW
3	Protection Grill	01473028		1	AL
4	Top Cover	01255262		1	AQ
5	Back Side Plate	01305036		1	AM
6	Handle	26235253		2	AC
7	Valve Support	01715001		1	AH
8	Metal Base	01205201		1	AU
9	Front Side Plate	01303023		1	AK
10	Protection Grill Gasket	12123093		1	AC
11	Axial Flow Fan	10335253		1	AQ
12	Condenser Assy	01125262		1	BZ
13	Motor Support	01705103		1	AN
14	Motor LW92H	150154512		1	BC
	Motor LW92A	15015451	WK	1	BC
15	Isolation Plate	01233024		1	AK
16	4-way Valve	04145220		1	BA
17	Compressor ATH290CV-C9LU	00103709		1	BU
18	Gas Valve	07103030		1	AV
19	Liquid Valve	07130209		1	AG
20	Temperature Sensor 20K	3900012121		1	AD
	Temperature Sensor 15K	390002064		1	AE
21	Electric Box	01395524		1	AH
		01395561	WK	1	AH
22	Terminal Board	420111451		1	AD
23	Terminal Board	42011103		3	AD
24	PTC Heater	34060008		0	AE
25	Capacitor CBB61 43F/500V	33010013		1	AF
26	Capacitor CBB65 60uF/450V	33000039		1	AM
27	Capacitor Clamp	02141375		1	AB
28	AC Contactor CJX9B-25S/01	44010222		1	AT
29	Isolation Washer C	70410523		1	AC
30	Wire Clamp	71010102		1	AB
31	4-way Valve Coil	430004002		1	AM
32	Compressor Gasket			0	
34	pressure switch	460200061		1	AL
		46020007		1	AH
		4602001544	WK	1	AL
	Transformer 57X25D	43110240		1	AL
35	Main PCB WZ4C352	30224058	WK	1	BA
	Main PCB WZ4C352	3022403301	without WK	1	BA
	Main PCB ZS401D	30224211	WK	1	AZ

The data are subject to change without notice.

3) Model: ASGE-36A

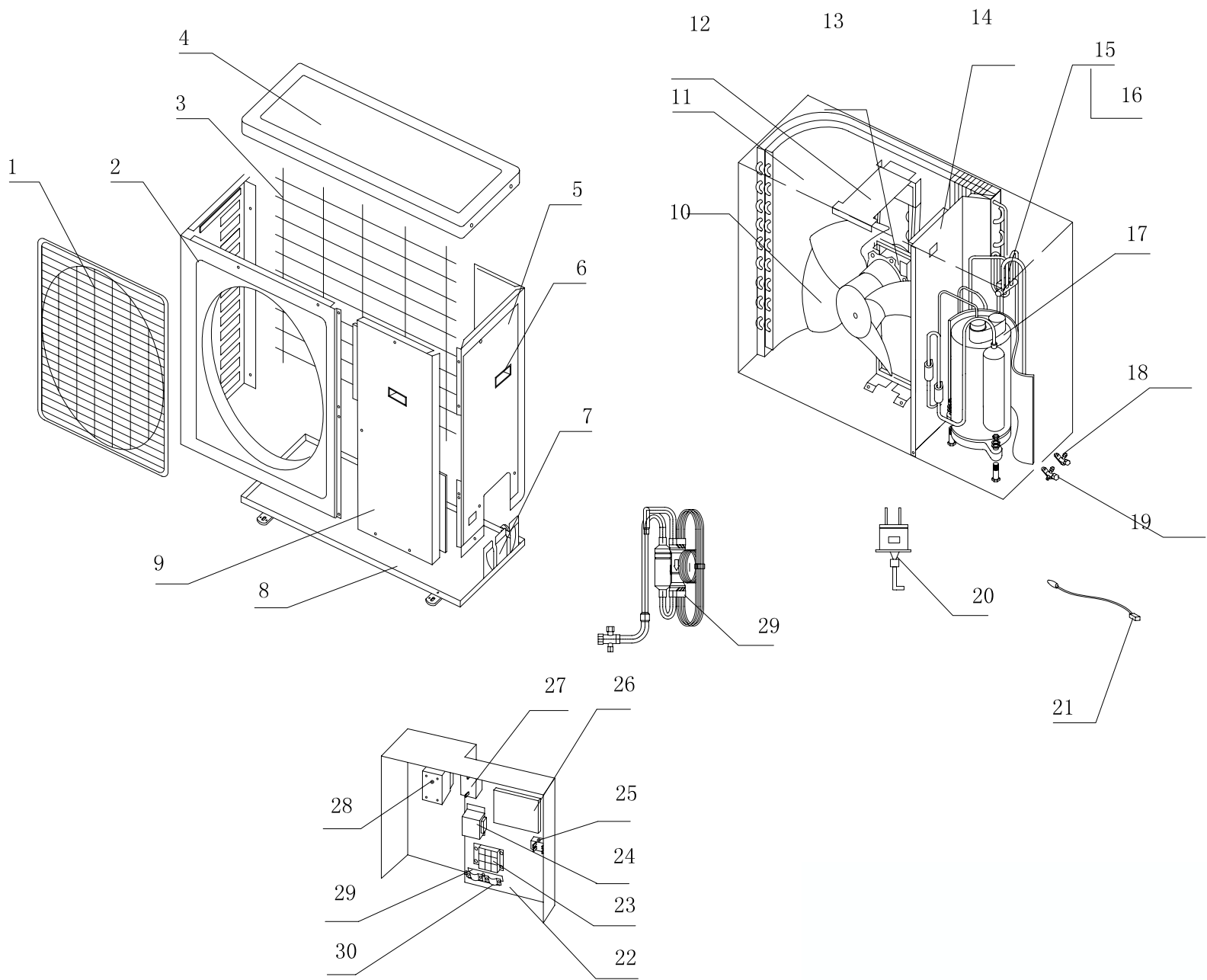
Exploded Views



No	Description	Part Code	Note	Qty	Price Code
MODEL: ASGE-36A					
1	Front Grill	22265401		1	AL
2	Front Plate	01435402		1	AU
3	Protection Grill	01475401		1	AG
4	Top Cover	01255402		1	AQ
5	Back Side Plate	01305401		1	AR
6	Handle	26235253		2	AC
7	Valve Support	01715402		1	AK
8	Metal Base	01205402		1	AU
9	Front Side Plate	01305403		1	AR
10	Axial Flow Fan	10335401		1	AQ
11	Condenser Assy	01125245		1	CF
12	Motor Support	017054020		1	AE
13	Motor LW92D	150154011		1	BD
14	Isolation Plate	01235403		1	AK
15	4-way Valve (SHF-20H)	43000338		1	AY
16	4-way Valve Coil	430004002		1	AM
17	Compressor C-SBN303H8D	00129050		1	CM
18	Gas Valve	07130212		1	AQ
19	Liquid Valve	07130210		1	AG
20	pressure switch	460200061		1	AL
		46020007		1	AL
21	Temp Sensor	3900012128		1	AD
22	Electric Box	01395511		1	AH
23	Terminal Board	42011044		1	AD
24	Transformer 57X25D	43110240		1	AL
25	Terminal Board	42011103		2	AD
26	Main PCB WZ4C352	3022403301		1	BA
27	Capacitor CBB61 4uF/500V	33010013		1	AG
28	AC Contactor	44010226		1	AT
29	Isolation Washer D	070410523		2	AC
30	Wire Clamp	071010102		1	AB

The data are subject to change without notice.

ASGE-36A WK



Spare parts list

NO.	Part Description	Part Code		qty	Price rank
		2011	update		
ASGE-36A WK					
1	Front Grill	22265401		1	AL
2	Housing	01435103P		1	AU
3	Rear Grill	01475401		1	AG
4	Top Cover	01255012P		1	AQ
6	Handle	26235253		2	AC
7	Valve Support Sub-Assy	01715402		1	AK
8	Underpan Sub-Assy	01205402		1	AU
9	Front Side Plate	01305403		1	AR
10	Axial-flow Fan	10335401		1	AQ
11	Condenser Assy	01125245		1	CF
12	Motor Support Sub-Assy	01705402		1	AE
13	Fan Motor	15705303		1	BD
14	Clapboard Sub-Assy	01235403		1	AK
15	4-way Valve	43000338		1	AY
16	4-way Valve Accessary	430004002		1	AM
17	Compressor and Fittings	00129050		1	CM
18	Cut-off Valve	07130212		1	AQ
19	Cut-off Valve	07130210		1	AG
20	Pressure Switch	460200061		1	AL
21	Ambient Temperature Sensor	3900012132G		1	AD
22	Electric Box Assy	01395755		1	AH
23	Terminal Board	420101851		1	AD
24	Transformer	4311023302		1	AH
26	Main Board	30224058		1	BA
27	Capacitor	33010037		1	AG
28	AC Contactor	44010226		1	AT
29	Capillary Sub-Assy	04105241		1	BC
	Tube sensor	3900012128G		1	AD
	Power Transformer	43110242		1	AL
	Dial Switch	45020054		1	AD
	Vapour Liquid Separator Components	07255403		1	BE
	Front Side Plate Sub-Assy	01305406		1	AR
	Inhalation Tube Sub-Assy	04675735		1	AN
	Electric Heater Band	76515404		1	AR
	Main board	30224211		1	AZ
	Drainage Connector	06123401		1	AA
	Underpan Assy	01205403		1	AU
	Rear Side Plate Sub-Assy	01305402		1	AR
	Terminal Board	42011147		1	AD
	Small Handle	26235401		1	AC
	Pressure Protect Switch	4602001544		1	AL

PART.1

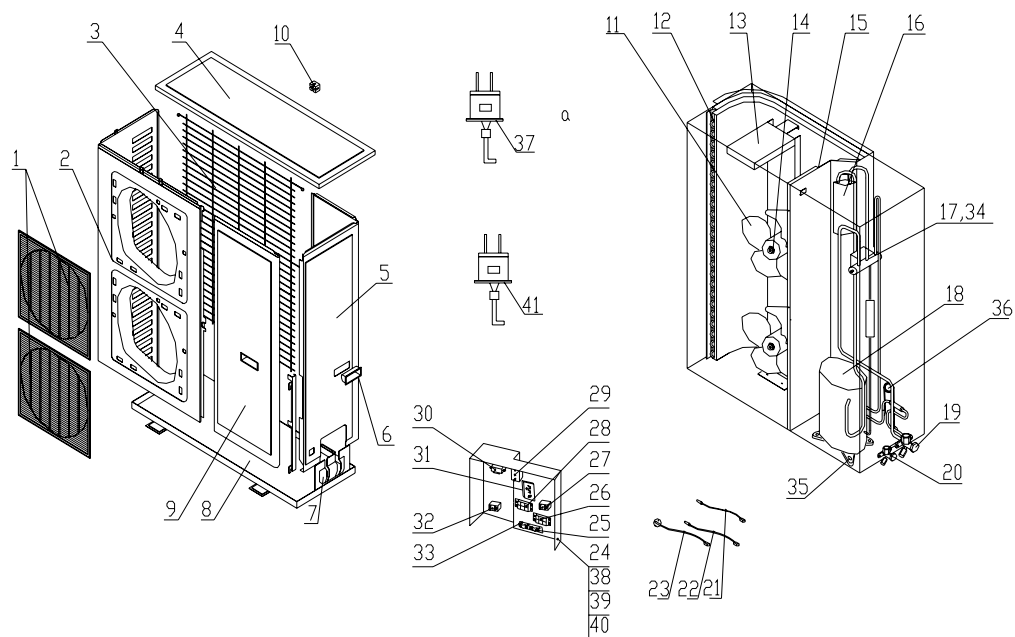
NO.	Part Description	Part Code		qty	Price rank
		2011	update		
ASGE-36A WK					
	Choke Plug	06813401		3	AE
	Over Current Protector	46020115		1	AS
	Compressor Gasket M-0101-DSB	76710209		3	AC
	Anti-phase Protector	46020052		1	AX
	Terminal Board	42011043		1	AD
	Terminal	42010157		2	AD
	Low Pressure Switch	46020007		1	AH
	Radiator	49010252		1	AS
	Temperature Sensor	39000017G		1	AD

PART.2

The data are subject to change without notice.

4) Model: ASGE-42A, ASGE-42A WK;

Exploded Views

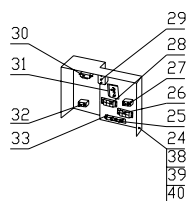
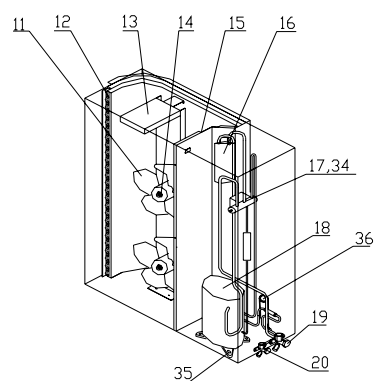
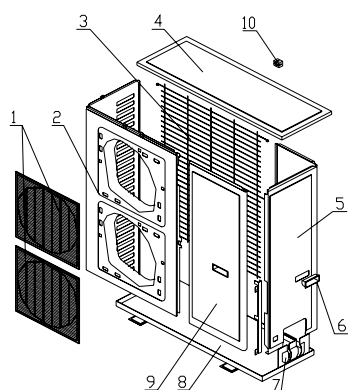


No	Description	Part Code	Note	Qty	Price Code
MODEL: ASGE-42A, ASGE-42A WK					
1	Front Grill	22414102		2	AL
2	Front Plate	01435436		1	BA
3	Protection Grill	01475432		1	AH
4	Top Cover	01255262		1	AQ
5	Back Side Plate	01305434		1	AR
6	Handle	26235253		3	AC
7	Valve Support	01715001		1	AH
8	Metal Base	01205433		1	AU
9	Front Side Plate	01305431		1	AT
10	Axial Flow Fan	10338731		2	AR
11	Condenser Assy	01125246		1	CL
12	Motor Support	01705431		1	AT
13	Motor FW68G	15013110		2	BC
14	Isolation Plate	01235440		1	AQ
15	Liquid-gas Support	07225011		1	BE
16	4-way Valve	43000338		1	AY
17	Compressor C-SBN373H8D	00129051		1	CN
18	Gas Valve	07130212		1	AQ
19	Liquid Valve	071302392		1	AG
20	Ambient Sensor (15K)	3900012126		1	AE
21	Temperature Sensor (20K)	3900012121		1	AD
22	Temperature Sensor (50K)	3900012129		1	AE
23	Electric Box	01395491		1	AH
		01395737	WK	1	AH
24	Wire Clamp	71010102		1	AB
25	Terminal Board	42011044		1	AD
26	Terminal Board	42011103		2	AD
27	Terminal Board	420101851		1	AD
28	Capacitor CBB61 3.5 μ F/450V	33010010		2	AG
29	AC Contactor GC3-18/01KK/3TF4211	44010226		1	AT
30	Overcurrent Protector HD-13.2-22/UO-10-13	46020112		1	AS
31	Phase Reverse Protector	46020052		1	AX
32	Isolation Washer D	70410525		2	AC
33	4-way Valve Coil	430004002		1	AM
34	Compressor Gasket			0	
35	Capillary Assy	04105242		1	AU
36	pressure switch	460200061		1	AL
		46020007		1	AH
		4602001519	WK	1	AL
37	Transformer 57X25D	43110240		1	AL
38	Main PCB WZ4C352	3022403301	without WK	1	BA
	Main PCB WZ4C352	30224058	WK	1	BA
	Main PCB ZS401D	30224211	WK	1	AZ
39	pressure switch	46020007		1	AH

The data are subject to change without notice.

5) Model: ASGE-48A, ASGE-48A WK;

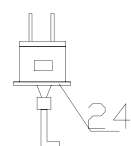
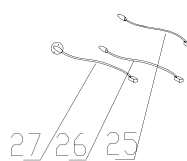
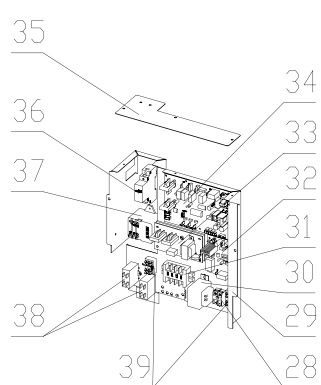
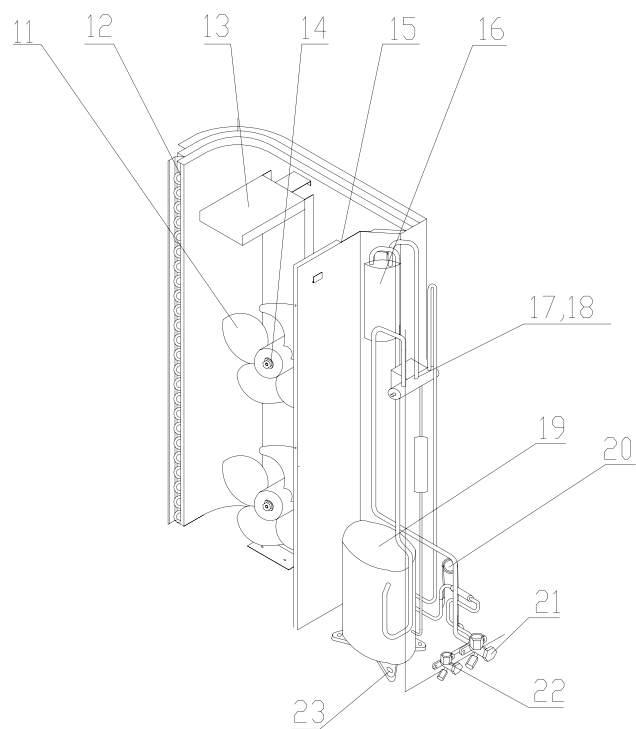
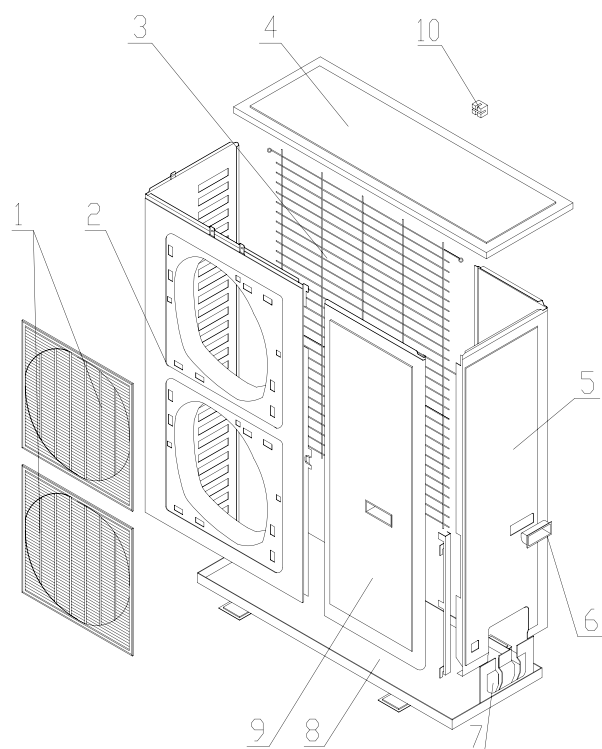
Exploded Views



No	Description	Part Code	Note	Qty	Price Code
MODEL: ASGE-48A, ASGE-48A WK					
1	Front Grill			0	
2	Front Plate	01435436		1	BA
3	Protection Grill	01475432		1	AH
4	Top Cover	01255262		1	AQ
5	Back Side Plate	01305434		1	AR
6	Handle	26235253		3	AC
7	Valve Support	01715001		1	AH
8	Metal Base	012054332		1	AU
9	Front Side Plate	01305431		1	AT
11	Axial Flow Fan	10338731		2	AR
12	Condenser Assy	01125257		1	CL
13	Motor Support	01705431		1	AT
14	Motor LW92A	15015451	WK	2	BC
	Motor LW92H	150154512			BC
15	Isolation Plate	01235440		1	AQ
16	Liquid-gas Separator	07225011		1	BE
17	4-way Valve	43000338		1	AY
18	Compressor JT170G-P8Y1	00205222		1	CF
19	Gas Valve	07130212		1	AQ
20	Liquid Valve	07130210		1	AG
21	Ambient Sensor(15K)	3900012126		1	AE
22	Temperature Sensor (20K)	3900012121		1	AD
24	Electric Box	01395736	WK	1	AH
		01395462			AH
25	Wire Clamp	71010102		1	AB
26	Terminal Board	42011044		1	AD
27	Terminal Board	42011103		3	AD
29	Capacitor CBB61 43F/500V	33010013		2	AF
30	AC Contactor LC1D2501M7C	44010213		1	AY
31	Overcurrent Protector HD-13.2-22/UO-10-13	46020112		1	AS
32	Phase Reverse Protector	46020052		1	AX
33	Isolation Washer C	70410523		1	AC
34	4-way Valve Coil	430004005		1	AM
36	Capillary Assy	04105255		1	AU
37	pressure switch	460200061		1	AL
		46020007		1	AH
		4602001519	WK	1	AL
39	Transformer 57X25D	43110240		1	AL
40	Main PCB WZ4C352	3022403301	without WK	1	BA
	Main PCB WZ4C352	30224058	WK		BA
	Main PCB ZS401D	30224211	WK	1	AZ

The data are subject to change without notice.

Model: ASGE-60A WK



NO.	Part Description	Part Code		qty	Price rank
		2011	update		
ASGE-60A WK					
1	Panel Grille	22414102		2	AL
2	Front Plate	01435436		1	BA
3	Rear Grill	01475432		1	AH
4	Top Cover	01255472		1	AQ
5	Rear Side Plate Sub-Assy	01303712		1	AR
6	Handle	26235253		2	AC
7	Valve Support Sub-Assy	01715001		1	AH
8	Underpan Sub-Assy	01205472		1	AU
9	Front Side Plate	01305431		1	AT
10	Sponge	12204221		4	AC
11	Axial-flow Fan	10335253		2	AQ
12	Condenser Assy	01125292		1	CM
13	Motor Support Sub-Assy	01705471		1	AE
15	Fan Motor	15015451		2	BC
16	Gas-liquid Separator Assy	07225016		1	BE
17	4-way Valve	43000338		1	AY
18	4-way Valve Sub-Assy	04145270		1	BA
19	Compressor and Fittings	00129052		1	CR
20	Capillary Sub-Assy	04105282		1	AZ
21	Cut-off Valve	07130212		1	AQ
22	Compressor Gasket M-0101-DSB	76710209		3	AC
23	Pressure Switch	460200061		1	AL
24	Temperature Sensor	3900012121G		1	AD
25	Discharge sensor	3900012129G		1	AE
26	Temperature Sensor	39000285		1	AD
27	Electric Box Assy	01395747		1	BQ
28	Terminal Board	420101851		1	AD
29	Electric Box Sub-Assy	01395584		1	AH
30	Transformer	43110171		1	AK
31	Terminal Board	42011043		1	AD
32	Main board	30224211		1	AZ
33	Over Current Protector	46020103		1	AS
34	Main Board	30224058		1	BA
35	Electric Plate Cover	01415210		1	AH
36	AC Contactor	44010213		1	AY
37	Anti-phase Protector	46020052		1	AX
38	Capacitor CBB61	33010013		2	AF
39	Terminal Board 2-8	42011103		3	AD
	Low Pressure Switch	46020007		1	AH
	Pressure Protect Switch	4602001519		1	AL
	4-way Valve Accessary	430004002		1	AM
	Inhalation Tube Sub-Assy	036390664		1	AN

PART.1

NO.	Part Description	Part Code		qty	Price rank
		2011	update		
ASGE-60A WK					
	Mid Clapboard Sub-Assy	01235473		1	AQ
	Electric Heater Band	76515404		1	AR
	Power Transformer	43110242		1	AL
	Dial Switch	45020054		1	AD
	Choke Plug	06813401		3	AE
	Drainage Connector	06123401		1	AA

PART.2

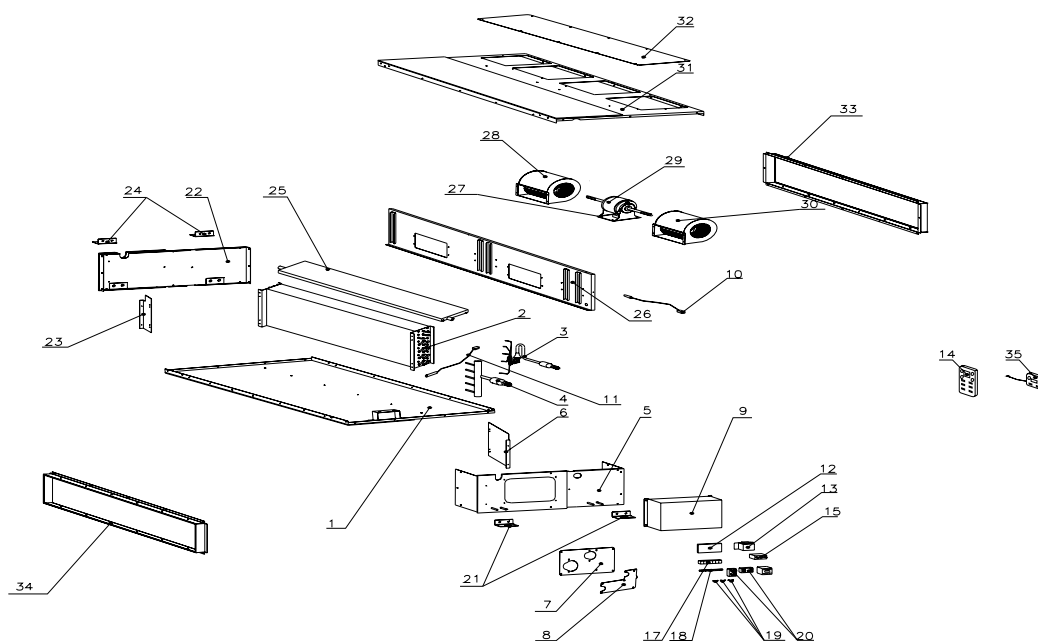
The data are subject to change without notice.

5.2 Indoor Unit

5.2.1 Duct Type

1) Model: ASDU-09A; ASDU-12A; ASDU-18A (2009-2010);

Exploded Views



No	Description	Part Code	Note	Qty	Price Code
MODEL: ASDU-09A, ASDU-12A, ASDU-18A					
1	Top Cover	01259051	09, 12	1	AS
		01259064	18	1	AS
2	Evaporator Assy	01039051	09	1	BN
		01039055	12	1	BN
		01038623	18	1	BQ
3	Liquid Inlet Pipe	032390521	09	1	AY
		036324561	12	1	AY
		03239074	18	1	AY
4	Collecting Gas Pipe	03829073	09	1	AX
		036324551	12	1	AX
		03639072	18	1	AX
5	Left Side Plate	0130905101	09, 12	1	AN
		0130866801	18	1	AN
6	Left Support of Evaporator	01079055	09, 12	1	AE
		01078629	18	1	AE
7	Seal of Left Side Plate	01499051	09, 12	1	AE
		01498640	18	1	AE
8	Seal of Connection Pipe	01499054c	09, 12	1	AD
		01498644	18	1	AD
9	Electric Box	1425703		1	AF
10	Room Temp Sensor	3900012123		1	AD
11	Tube Temp Sensor	390001921		1	AD
12	Main Z8235	30228204	OLD	1	BA
12	Main Board Z8232	30228205	update 2011	1	BA
13	Transformer 54X25C	43110239		1	AK
14	Remote controller	305050031		1	AT
15	Capacitor CBB611A 1uF/500V	33010089	09	1	AE
	Capacitor CBB611A 3uF/450V	33010027	12	1	AE
	Capacitor CBB611A 3.5uF/450V	33010010	18	1	AG
17	Terminal Board	42010194		1	AD
18	Isolation Washer C	70410523		1	AC
19	Wire Clamp	71010102		1	AB
20	Terminal Board 2-8	42011103		2	AD
21	Hook	2112446		2	AD
22	Right Side Plate	1309055		1	AM
23	Left Support of Evaporator	1079056		1	AE
24	Hook	2112446		2	AD
25	Water Tray	01279051	09, 12	1	AW
		01278633	18	1	AW

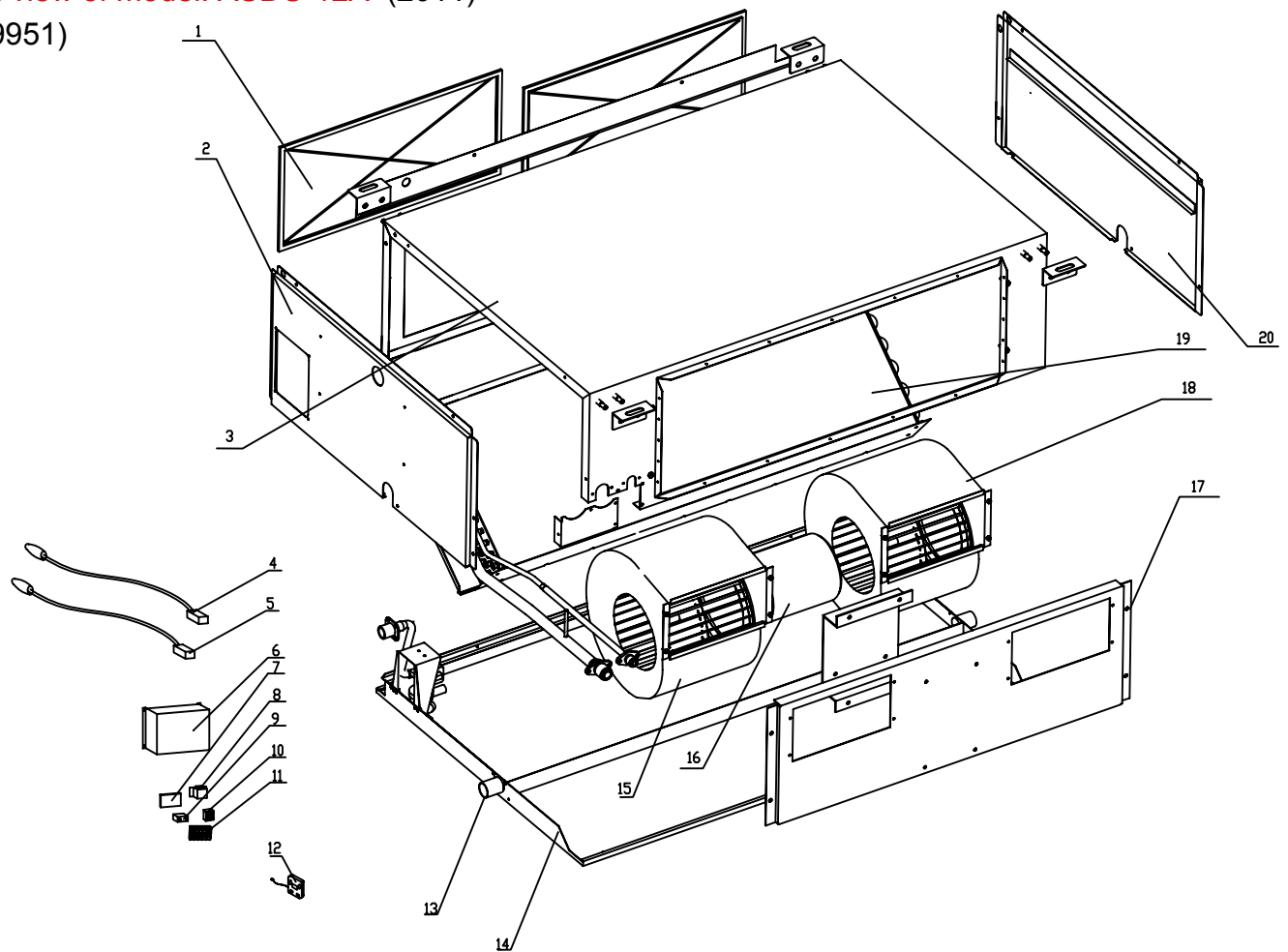
Part.1

No	Description	Part Code	Note	Qty	Price
MODEL: ASDU-09A, ASDU-12A, ASDU-18A					
26	Fan Fixed Plate	01339095	09, 12	1	AU
		01339058	18	1	AU
	Fan	10319051		2	
27	Motor Support	01709058	09, 12	1	AE
		01709056	18	1	AE
28	Front volute casing	22202030	18	1	AL
	Fan motor sub-assy	15002401	18	1	AY
29	Motor FG20C	15019053	09	1	BB
	Motor FG20E	15019522	12	1	BB
	Motor FG70B	15018322	18	1	BD
30	Propeller housing	22202029	18	1	AL
	Fan motor	1570520201	18	1	
31	Bottom Cover	01259086	09, 12	1	AU
		01265296	18	1	AU
32	Bottom Cover Assy	01259054	09, 12	1	AL
33	Cover of Air-in	01259056	09, 12	1	AM
		01258650	18	1	AM
34	Side Plate of Air intake	01499055	09, 12	1	AM
		01499061	18	1	AM
35	Display Board Z4B351	30294213		1	BA

Part.2

Exploded view of model: ASDU-12A (2011)

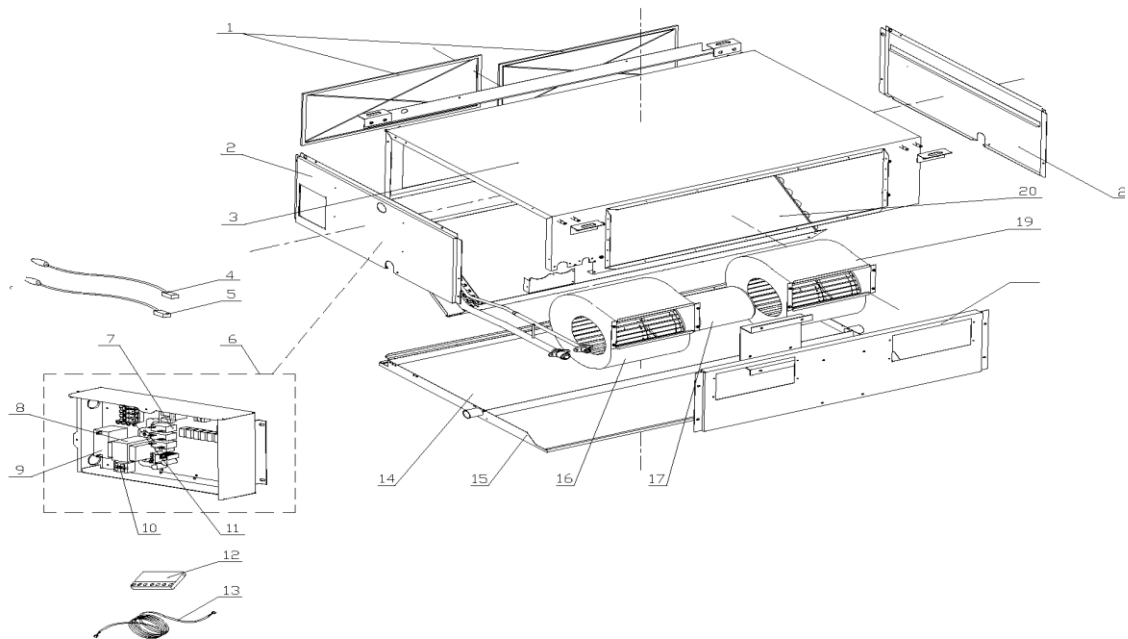
(batch 29951)



No	Description	Part Code	Note	Qty	Price Code
MODEL: ASDU-12A					
1	Filter Sub-Assy	11725201		1	
2	Seal of Left Side Plate	01499051		1	
3	Top Cover Board Assy	01259051		1	
4	Ambient Temperature Sensor	3900012123		1	
5	Temperature Sensor 20KT-EH-2P(black)-850mm	390001921G		1	
6	Electric Box Assy	01395767		1	
7	Main Board Z8225 (DIP ASSEMBLY)	30228205		1	
8	Transformer 54X25C	43110239		1	
9	Capacitor CBB61 3uF 450V	33010027		1	
10	Terminal Board (2)	420101851		1	
11	Terminal Board (5)	42010194		1	
12	Display Board Z4B351	30294213		1	
13	Water Tray Assy	01279051		1	
14	Lower Cover Plate Sub-Assy	01259054		1	
15	Centrifugal fan	10319051		2	
16	Fan Motor FG40A	1570520103		1	
17	Fan Fixed Plate	01339095		1	
18	Centrifugal fan	10319051		2	
19	Evaporator Assy	010090583		1	
20	Right Side Plate Assy	01309054		1	

The data are subject to change without notice.

Exploded view of model ASDU-18A

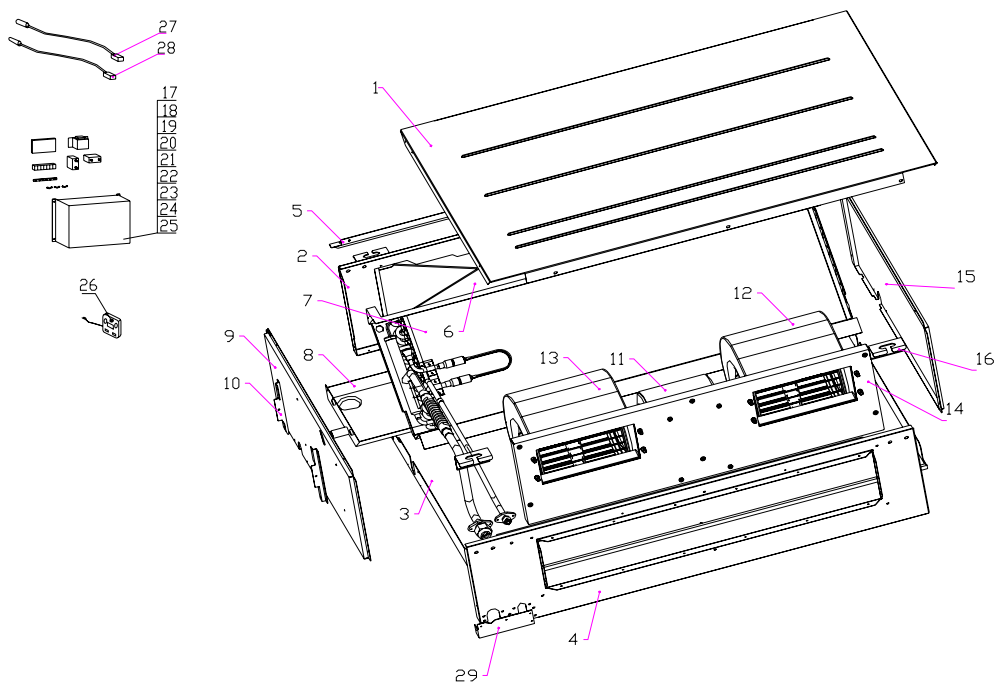


No	Description	Part Code	Note	Qty	Price Code
MODEL: ASDU-18A					
1	Filter Sub-Assy	11125303		2	
3	Top Cover Assy	01265301		1	
2	Left Side Plate Assy	01315293		1	
4	Ambient Temperature Sensor	3900012123		1	
5	Tube sensor	3900012121		1	
6	Electric Box Assy	01395765		1	
7	Main Board	30228205		1	
8	Transformer	43110239		1	
9	Capacitor CBB61	33010014		1	
10	Terminal Board	420101851		1	
11	Terminal Board	42010194		1	
12	Display Board	30294213		1	
13	Signal Wire	40010232		1	
14	Water Tray Assy	01285317		1	
15	Bottom Cover Assy	01265304		1	
16	Fan Assy (right)	15012458		1	
17	Fan Motor	15705304		1	
18	Fan Fixed Plate Assy	01325301		1	
19	Fan Assy (left)	15012454		1	
20	Evaporator Assy	01025366		1	
21	Right Side Plate Assy	01315304		1	

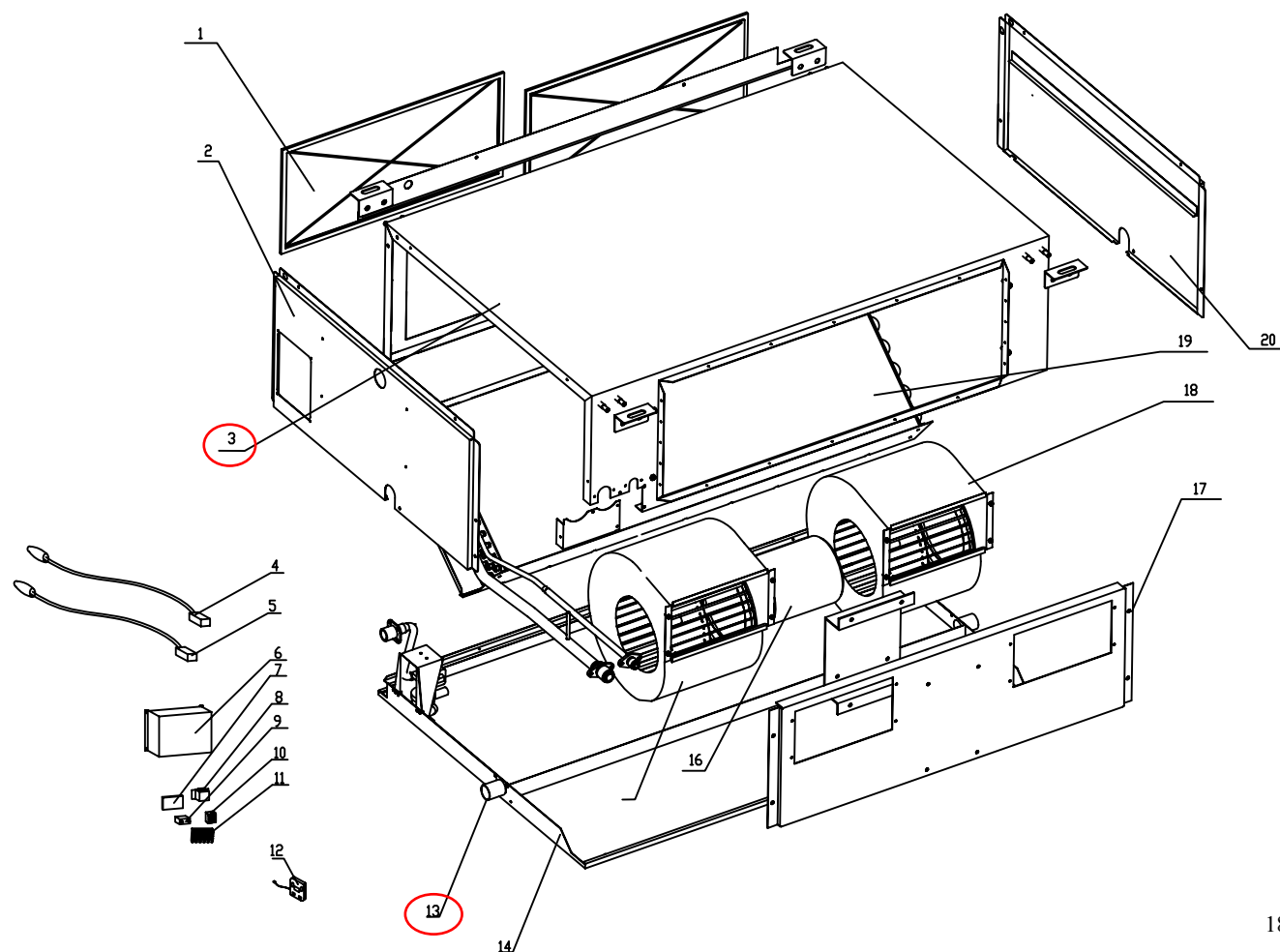
The data are subject to change without notice.

3) Model: ASDU-24A, ASDU-36A; ASDU-42A; ASDU-48A;

Exploded View VER.1



Exploded view VER.2



NO.	Part Description	Part Code			qty	Price rank
		older	update	model		
MODEL: ASDU-24A, ASDU-36A, ASDU-42A, ASDU-48A						
EXPL. VIEW VER.1						
1	top cover 3		01265240	ALL	1	AU
2	top cover 2		01265242	ALL	1	AR
3	Bottom Cover	15265301	01265304	ASDU-24A	1	AU
3	Bottom Cover	15265301	15265302	ASDU-36,42,48A	1	AU
4	top cover 1		01265239	ALL	1	AS
5	end plate of air intake door		01375301	ALL	1	AE
6	air filter		11125303	ASDU-24A	2	AK
6	air filter		111253031	ASDU-36,42,48A	2	AK
7	Evaporator Assy		01025366	ASDU-24A	1	BS
7	Evaporator Assy		01025249	ASDU-36A	1	BX
7	Evaporator Assy		0102524901	ASDU-42A	1	BX
7	Evaporator Assy		01025274	ASDU-48A	1	BY
8	water tray panel		01285306	ALL	1	AT
9	right side plate		01315293	ASDU-24A	1	AM
9	right side plate	01315311	01315291	ASDU-36,42,48A	1	AM
10	electric support		01729160	ALL	2	AD
11	Fan Motor (FG500A ?)	15705301	15705304	ASDU-24A	1	BD
11	Fan Motor (FG500A ?)	15019063	15705305	ASDU-36,42,48A	1	BN
12	Motor(left) SYP-160/200J		15012454	ASDU-24A	1	AY
12	Motor		15018603	ASDU-36,42,48A	1	BB
13	Motor(right) SYP-160/200J		15012458	ASDU-24A	1	AY
13	Motor		15018604	ASDU-36,42,48A	1	BB
14	Fan Fixed Plate		01325301	ASDU-24A	1	AU
14	fan fixed plate		01325220	ASDU-36,42,48A	1	AU
15	left side plate		01315304	ASDU-24A	1	AM
15	left side plate		01315308	ASDU-36,42,48A	1	AM
16	hook		02112466	ALL	4	AD
17	Electric Box Assy		01395765	ASDU-24A	1	BM
17	Electric Box		01399152	ASDU-36,42,48A	1	AF
18	Main PCB2 Z8235	30228204	30228205	ALL	1	BA
19	Transformer		43110239	ALL	1	AK
20	Capacitor		33010014	ASDU-24A	1	AG
20	Capacitor		33010734	ASDU-36,42,48A	1	AG
21	el. Box cover		01425226	ALL	1	AE
22	terminal board		42011103	ALL	3	AD
23	Terminal Board		42010194	ALL	1	AD
24	isolation washer C		704410523	ALL	1	AC
25	wire clamp		71010102	ALL	2	AB
26	Display Board		30294213	ALL	1	BA
27	Temperature Sensor		3900012123G	ASDU-24A	1	AD
27	Temperature Sensor (15K black)		3900012123	ASDU-36,42,48A	1	AD
28	Temperature Sensor		3900012121G	ASDU-24A	1	AD
28	Tube Sensor (20K black)		390001921	ASDU-36,42,48A	1	AD
29	seal of connection pipe (valve)	01495305	01495304	ALL	1	AE

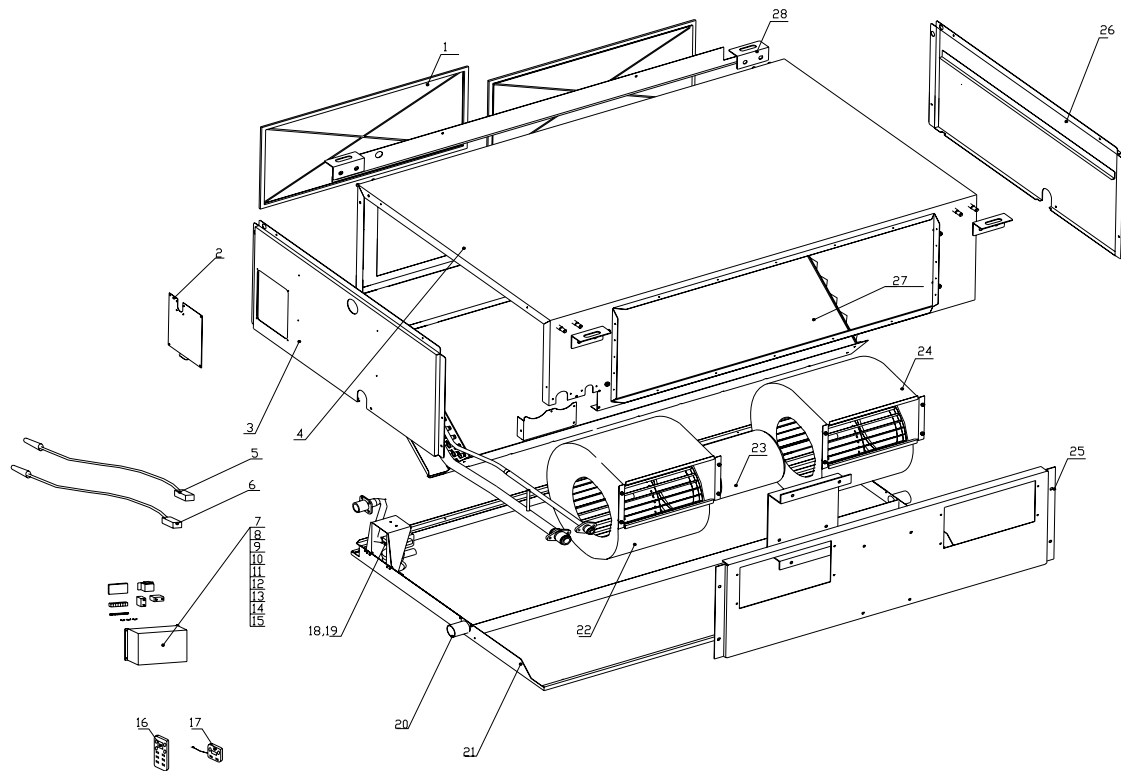
NO.	Part Description	Part Code			qty	Price rank
		older	update	model		
MODEL: ASDU-24A, ASDU-36A, ASDU-42A, ASDU-48A						
	Electric Box Assy		01395764	ASDU-36,42,48A	1	BN
	Terminal Board		420101851	ALL	1	AD
	Remote Controller		305050031	ALL	1	AT
	Choke Plug of Drain Pipe		76712455	ALL	1	AC
	Motor Sub-Assy		15405301	ALL	1	AP
	Relay		44020366	ALL	1	AN
	Dial Switch		45020054	ALL	1	AD
	4-core Cable		40010232	ALL	1	AN
	Radiator		49010252	ALL	1	AS
	Electric Box Cover		01425269	ALL	1	AE
	Electrical Retaining Plate		01845221		1	AF
	Evaporator Assy		102525001	ASDU-42A	1	BX

EXPL. VIEW VER.2						
3	Top Cover	01265301		ASDU-24A	1	BA
3	Top Cover	01265306		ASDU-36,42,48A	1	BA
13	Water Tray Foam	01285317		ASDU-24A	1	AL
13	Water Tray Components	01285323		ASDU-36,42,48A	1	AY

The data are subject to change without notice.

6) Model: ASDU-60A ;

Exploded Views

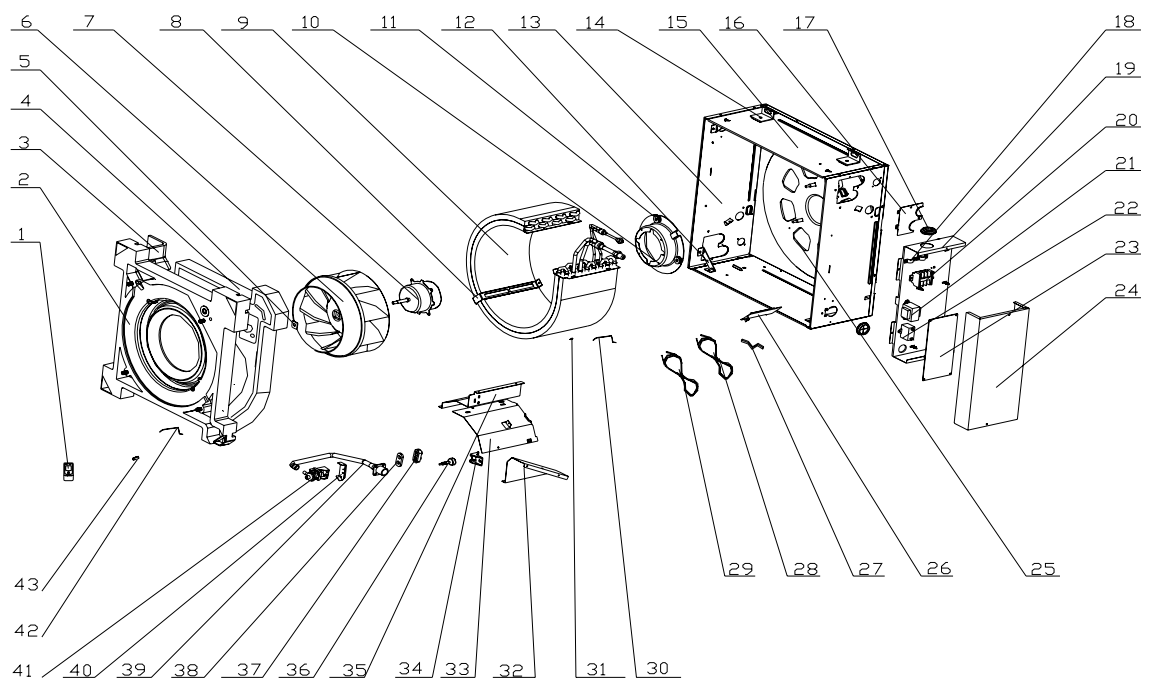


No	Description	Part Code	Note	Qty	Price Code
MODEL: ASDU-60A					
1	Filter Sub-assy	111253032		2	AK
2	Seal of Connection Pipe	1495226		1	AE
3	Left Side Plate	01309108		1	AN
4	Top Cover	01259112		1	BA
5	Temperature Sensor	3900012123G		1	AD
6	Temperature Sensor	3900012121G		1	AD
7	Electric Box Assy	01399152		1	AF
8	Main PCB2 Z8235	30228205		1	BA
9	Transformer	43110239		1	AK
10	Capacitor	33010734		1	AG
12	Terminal Board	42011103		1	AD
13	Terminal Board	42010194		1	AD
14	Isolation washer C	70410523		1	AC
15	wire clamp	71010102		1	AB
16	Remote Controller	305050031		1	AT
17	Display Board	30294213		1	BA
20	Water Tray	01285270		1	AX
21	Bottom Cover	01259114		1	AU
22	Fan (right) SYP-200/190J-3	15019066		1	BA
23	Fan Motor (2011)	15705305		1	
23	Fan motor FG500A (old)	15019063		1	BN
25	Fan Fixed Plate	01339110		1	AU
24	Fan (left) SYP-200/190J-3	15019065		1	BA
27	Evaporator Assy (old)	01025317		1	AM
27	Evaporator Assy (2011)	01025331		1	
26	Right Side Plate Sub-Assy	01309111		1	CA
28	Hook	02112466		4	AD
	Motor Support Sub-Assy	01709070		1	
	Choke Plug of Water Pipe	76712454		1	
	Electrical Retaining Plate	01845221		1	
	Electric Box Cover	01425269		1	

5.2.2 Cassette Type

1) Model: ASCU-12A; ASCU-18A;

Exploded Views

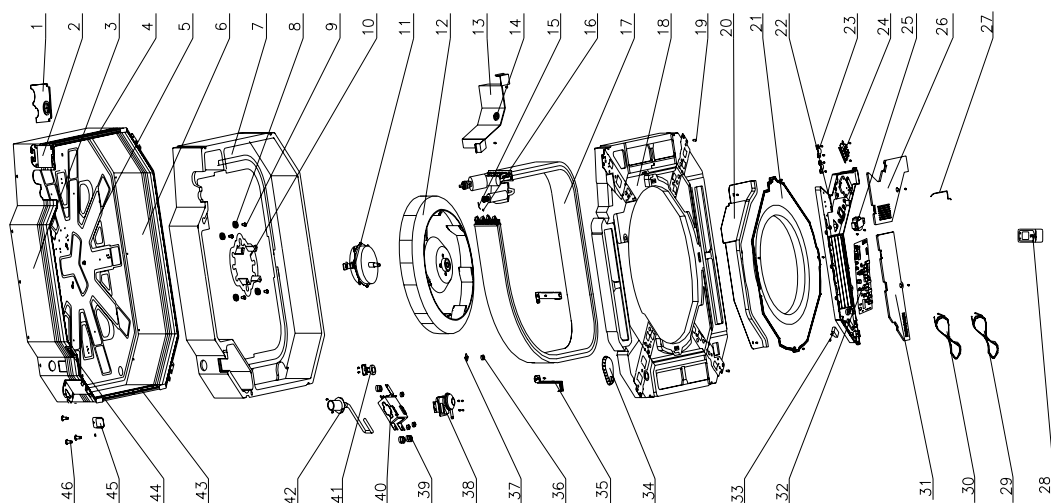


No	Description	Part Code	Price Code	Qty	Note
MODEL: ASCU-12A, ASCU-18A					
1	Remote Controller Y512	305125063	AT	1	
2	Water Tray	20182703	AW	1	
3	Water Tray Foam for Fresh Air Intaking	12312702	AU	1	
4	Water Tray Foam	12312703	AV	1	
5	Fan Fixer	76712709	AB	1	
6	Centifugal Fan	10312702	AW	1	
7	Motor FN11T	15012707	AX	1	
8	Evap Support	1072714	AE	1	
9	Evaporator Assy	1029608	BQ	1	
10	Motor Support	1702702	AF	1	
11	Motor Gasket	76712705	AC	3	
12	Water Tray support	1332706	AE	4	
13	Front Side Plate	1302741	AM	2	
14	Body Fixer	1332705	AG	4	
15	Right Side Plate	1302743	AM	2	
16	Tube-exit plate	1382719	AC	1	
17	Cable-cross Loop	76515202	AB	2	
18	Wire Clamp	71010103	AB	1	
19	Electric Box Assy	140270501	AH	1	
20	Terminal Board	42010258	AF	1	
21	Transformer 48X26G	43110233	AH	1	
22	Capacitor CBB61 2.5uF/450VAC	33010026	AE	1	
23	Main PCB Z71351D	30227110	AX	1	
24	Electric Box Cover	1412723	AD	1	
25	Base Plate	1222712	AQ	1	
26	Cord Baffle Plate	1362701	AC	1	
27	Connecting Wire	40030232	AE	1	
30	Tube Sensor	390000592	AD	1	
31	Sensor Insert B	42020063	AD	1	
32	Left Baffle Plate	1362703	AD	1	
33	Evap Connection	1072713	AE	1	
34	Water Level Switch Support	24212705	AC	1	
35	Right Baffle Plate	1362702	AE	1	
36	Water Level Switch	450127011	AM	1	
37	Pump Gasket 1	76712707	AC	1	
38	Pump Gasket 2	76712708	AC	1	
39	Pump Drainage	5232722	AD	1	
40	Pump Support	1332707	AE	1	
41	Water Pump PSB-7	43130320	BA	1	
42	Room Sensor	39000191	AD	1	
43	Wire Clamp	71010105	AB	1	

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2) Model: ASCU-24A; ASCU-36A; ASCU-42A; ASCU-48A;

Exploded Views



NO.	Part Description	Part Code	MODEL	qty	Price rank
		2011			
ASCU-24A, ASCU-36A, ASCU-42A, ASCU-48A					
1	Tube Exit Plate Assy	01382715	ALL	1	AD
2	Major Mounting Plate	01332701	ALL	4	AC
3	Front Side Plate	01302713	36,42,48	1	AN
		1302718	24	1	AN
4	Left Side Plate Assy	01302711	36,42,48	1	AM
		1302715	24	1	AM
5	Base Plate Assy	01222701	ALL	1	AR
6	Rear Side Plate	1302714	24	1	AM
		01302709	36,42,48	1	AM
7	Bottom Foam	52012721	ALL	1	AU
8	Motor Gasket	76712711	ALL	4	AC
9	Bolt	70212701	ALL	3	AC
10	Motor Mounting Rack	01702701	ALL	1	AF
11	Fan Motor FN35B	151012703	24	1	AZ
		15012706 (older)	36,42,48	1	AZ
	Fan Motor	15709410	36,42,48	1	AZ
12	Centifugal Fan	10312705	24	1	AX
		10310101	36,42,48	1	AX
13	Evaporator Linkage	1074042	24	1	AE
		01072732	36,42,48	1	AG
14	Cable-cross loop	76512702	ALL	1	AF
15	Tube Sensor (20K black)	390001921	ALL	1	AD
		390001921G	ALL	1	AD
16	sensor insert B	42020063	ALL	1	AD
17	Evaporator Assy	10027101	24	1	BR
		1029402	36	1	BS
		12029405	42	1	BT
		01029409	48	1	BT
18	Water Tray Assy	20182701	ALL	1	BC
20	Electric Box Base Plate	01412721	ALL	1	AK
21	Flow Guide Loop	10372722	ALL	1	AM
22	Electric Box Assy	1399414	24	1	AH
		1399533	24	1	AH
		1399621	36	1	AH
		1399530	42	1	AH
		20102701	42,48	1	AH
		1399529	48	1	AH
23	Wire Clamp	71010102	ALL	1	AB
24	Terminal Board	42010258	ALL	1	AF
		420101851 (older)	ALL	1	AD
25	Transformer 48X26G	43110233 (older)	ALL	1	AH
		43110226	ALL	1	AH

Part.1

Part.2

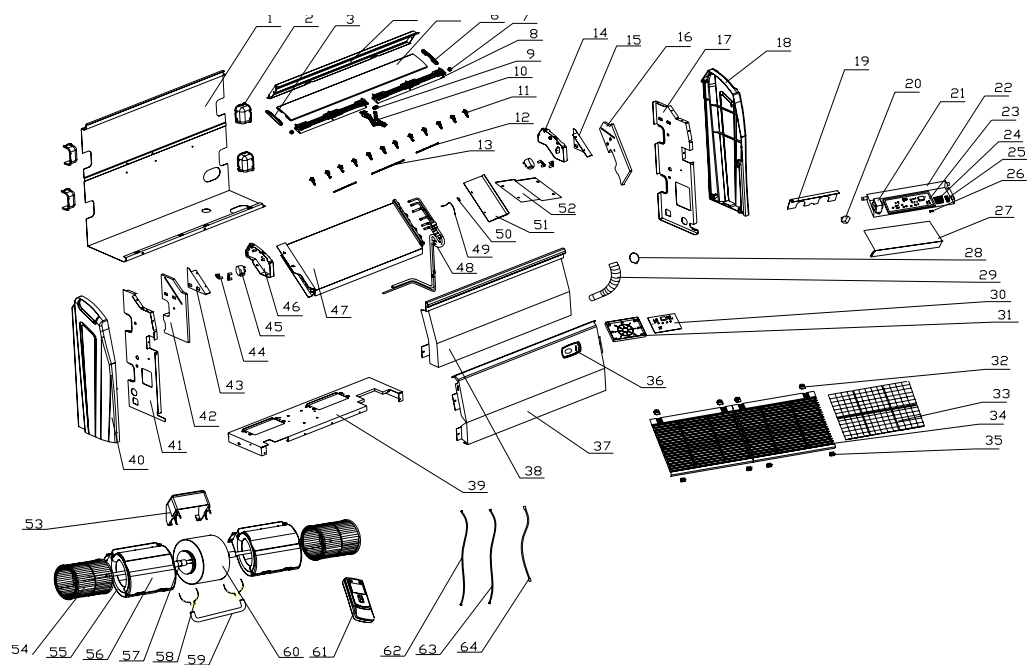
NO.	Part Description	Part Code	MODEL	qty	Price rank
		2011			
ASCU-24A, ASCU-36A, ASCU-42A, ASCU-48A					
26	Electric Box Cover Sub-Assy1	20102702 (older)	ALL	1	AD
		20122054	ALL	1	AD
27	Ambient Temperature Sensor	390001911	ALL	1	AD
28	Remote Controller Y512	305125063	ALL	1	AT
31	Electric Box Cover Sub-Assy2	20102703 (older)	ALL	1	AD
		20122055	ALL	1	AD
32	Main PCB Z71351E	30227111	ALL	1	BB
33	Capacitor CBB61 3,5uF/450V	33010010	24		AG
		33010012	36,42,48	1	AE
34	Drainage Plastic	5230025	ALL	1	AD
35	Evaporator of Fixed Mount	1072703	24		AD
		1072707	36,42,48	2	AD
	Evaporator Linkage	01072732 (older)	36,42,48	1	AG
36	Nut with Washer M6	70310012	ALL	7	AC
37	Fan Fixer	10312701	ALL	1	AB
38	Water Pump Assy	1332751	36,42,48	1	BC
	Water Pump	43130324 (older)	ALL	1	BC
39	Pump Gasket	76712702	ALL	3	AC
40	Pump support	1332721	ALL	1	AE
41	Water Level Switch	45010201	ALL	1	AR
42	Drain Pipe for Water Pump	05230026	ALL	1	AD
43	Right Side Plate Assy	1302716	24		AM
		1302712	36,42,48	1	AM
45	Pump Backup Cover Plate Assy	01252713	ALL	1	AD
	Display Board Z7A351	30297301	ALL	1	AX
	Drain Hose Assy	5232702	ALL	1	AD
	Upper shell	27220001191	36,42,48	1	AL
	Remote Controller	305150231 (OLDER)	36,42,48	1	AT
	Power cord	40020881	36,42,48	1	AN

The data are subject to change without notice.

5.2.3 Ceiling Type

1) Model: ASFU-09A; ASFU-12A; ASFU-18A;

Exploded Views



No	Description	Part Code	Note	Qty	Price Code
MODEL: ASFU-09A, ASFU-12A, ASFU-18A					
1	Rear Side Plate	01302013		1	AX
2	Handle	26232001		4	AD
3	Left Decoration Plate	261124152		1	AE
4	Rear Side Plate of Air Outlet	130201501		1	AK
5	Louver	1051953202		1	AF
6	Right Decoration Plate	261124162		1	AE
7	Shaft of Louver II	10512026		2	AB
8	Louver Support	24212019		2	AC
9	Shaft of Louver I	10512025		1	AB
10	Louver Fixer	24212018		1	AE
11	Swing Louver	10512027		12	AC
12	Connecting Lever	10582009		1	AC
13	Connecting Lever	10582008		2	AC
14	Right Swing Motor Fixer	26152006		1	AD
15	Right Fixing Plate of Evaporator	01072411		1	AD
16	Foam of Right Side Plate	12312404		1	AD
17	Right Fixing Plate	01332404		1	AH
18	Right Decoration Panel	26112027		1	AL
19	Pipe Clamp Plate	0107243701		1	AC
20	Capacitor CBB611A 1uF/450	33010089	09	1	AE
	Capacitor CBB611A 1.5uF/450V	33010020	12		AE
	Capacitor CBB611A 3uF/450V	33010027	18		AE
21	Transformer 57X25C	43110237		1	AM
22	Electric Box	01402407	09	1	AG
		0140240701	12, 18		AG
23	Main PCB Z7A251B	30227021		1	BA
24	Terminal Board	42011159		1	AD
25	Wire Base	24253001		1	AC
	Wire Clamp	24253002		1	AC
26	Fuse 5A 250VAC	46010013	12, 18	1	AA
27	Cover of Electric Box	1412408		1	AF
28	Pipe Clip	70812001		1	AB
29	Drainage Pipe	05235433		1	AE
30	Display Board 5T52	30545654		1	AW
31	Electric Box	20102138		1	AD
32	Front Grill Clip 1	26252002		2	AB
33	Filter	11122013		1	AD
34	Front Grill	22412010		1	AL
35	Front Grill Clip 2	26252003		2	AB
36	Buttons Panel	201620041		1	AE

PART 1

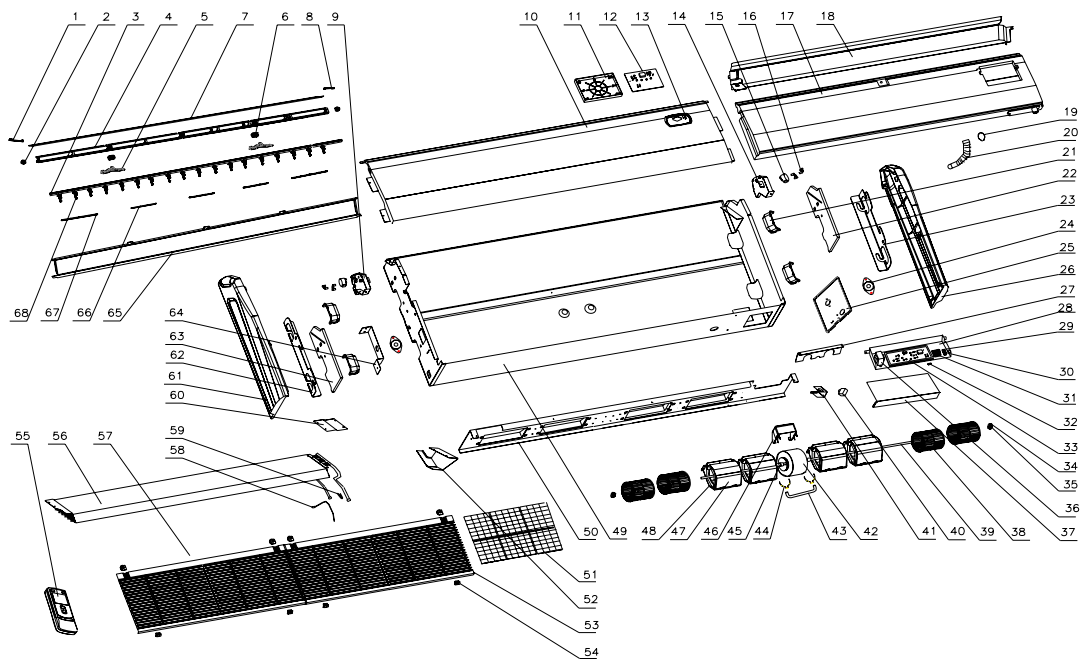
No	Description	Part Code	Note	Qty	Price Code
MODEL: ASFU-09A, ASFU-12A, ASFU-18A					
37	Front Panel	01532001	09	1	AN
		01532001P	12, 18		AN
38	Water Tray Panel	01272205	09	1	AZ
		01272205P	12, 18		AZ
39	Motor Support	01709532		1	AT
40	Left Decoration Panel	26112028		1	AL
41	Left Fixing Plate	01332405		1	AH
42	Left Side Foam	12312403		1	AD
43	Left Fixing Plate of Evaporator	01072410		1	AD
44	Motor Clamp	26112026		4	AC
45	Step Motor MP35CA	15212402		2	AF
46	Left Swing Motor Fixer	26152005		1	AD
47	Evaporator Assy	01032466	09	1	BG
		01032467	12		BG
		01032468	18		BK
48	Liquid-intake Pipe Components	03222465	09	1	AX
		03222519	12		AX
		03222520	18		AX
	Air Collecting Pipe Components	03533200	09	1	AW
		03533425	12		AW
		03533428	18		AW
49	Temp Sensor □ 20K□	39000194		1	AD
50	Temp Sensor Insert	42020063		1	AD
51	Water Lead Panel	01362001		1	AD
52	Cover of Evaporator	01072409		1	AC
53	Fixed Mount	01708763		1	AK
54	Centrifugal Fan	10312401		2	AS
55	Rear Snail Shell	22202032		2	AF
56	Front Snail Shell	22202031		2	AG
58	Bar Clasp	70819522		4	AD
59	Hoop	70819521		1	AD
60	Motor PG10H	15707302	09, 12	1	BB
	Motor PG40F	157073024	18		BB
61	Remote Controller Y512	305125063		0	AT
64	Signal Cable	4001023214		1	AM

PART 2

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2) Model: ASFU-24A;

Exploded Views



No	Description	Part Code	Price Code	Qty	Note
MODEL: ASFU-24A					
1	Left Decoration Plate	261124172	AE	1	
2	Shaft of Louver I	10512025	AB	2	
3	Swing Louver Fixer	13324232	AE	1	
4	Louver Support	24212020	AC	3	
5	Louver Fixer	24222016	AC	4	
6	Louver	105124042	AH	1	
7	Shaft of Louver II	10512026	AB	2	
8	Right Decoration Plate	261124212	AE	1	
9	Left Swing Motor Fixer	26152007	AD	1	
10	Front Panel	1532414	AU	1	
11	Electric Box	20102138	AD	1	
12	Display Board 6152BJ	30545654	AW	1	
13	Buttons Panel	20162004	AE	1	
14	Right Swing Motor Fixer	26152408	AD	1	
15	Step Motor MP35CA	15212402	AF	2	
16	Motor Clamp	26112026	AC	4	
17	Water Tray	1272412	AZ	1	
18	Auxiliary Water Tray	1272413	AN	1	
19	Pipe Clip	70812001	AB	1	
20	Drainage Pipe	5235433	AE	1	
21	Handle	26232001	AD	4	
22	Foam of Right Side Plate	12312408	AD	1	
23	Right Fixing Palte	1332404	AH	1	
24	Support of Motor Bearing	1792408	AC	2	
25	Fixer of Motor Support	1792409	AF	1	
26	Right Decoration Panel	26112033	AL	1	
27	Pipe Clamp	1072424	AC	1	
28	Electric Box	140240701	AG	1	
29	Wire Base	24253001	AC	1	
30	Wire Clamp	24253002	AC	1	
31	Terminal Board RS9413G	42011159	AD	1	
33	Main PCB Z7A251B	`30227021	BA	1	
34	Ring of Bearing	76512404	AC	2	
35	Fan Bearing	76512210	AC	2	
36	Transformer 57X25C	43110237	AM	1	
37	Cover of Electric Box	1412408	AF	1	
38	Centrifugal Fan	10312401	AS	4	
39	Rotary Axis	73012401	AR	2	
40	Capacitor CBB61 3uF/450V	33010027	AE	1	
42	Motor FN100B	`15012406	BC	1	
43	Motor Fixer	1722409	AD	1	
44	Motor Clamp	1702405	AD	3	

PART 1

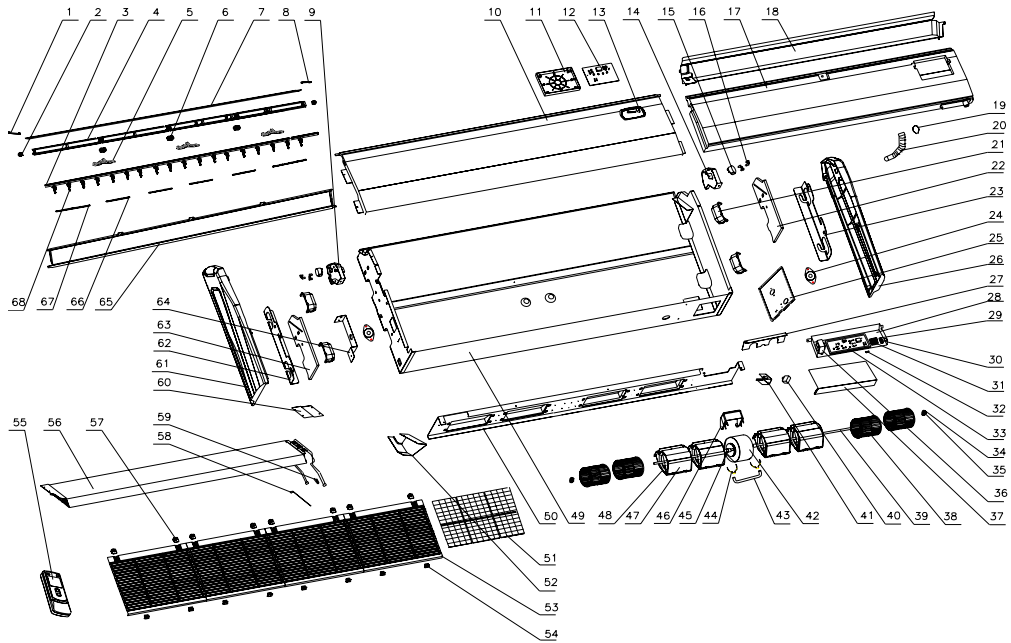
No	Description	Part Code	Price Code	Qty	Note
MODEL: ASFU-24A					
45	Axes Connector	73012403	AL	2	
46	Motor Fixing Plate	1332426	AK	1	
47	Front Snail Shell	22202031	AG	4	
48	Rear Snail Shell	22202032	AF	4	
49	Rear Side Plate	1302430	AZ	1	
50	Motor Support	1702410	AT	1	
51	Filter	11122012	AD	1	
52	Water Lead Plate	1362401	AD	1	
53	Front Grill	22412011	AL	1	
54	Front Grill Clip 2	26252003	AB	2	
55	Remote Controller Y512	305125063	AT	0	
56	Evaporator Assy	10024052	BP	1	
57	Front Grill Clip 1	26252002	AB	2	
58	Temp Sensor	390001215	AD	1	
59	Temp Sensor Insert	42020063	AD	1	
60	Cover of Evaporator	1072417	AC	1	
61	Left Decoration Panel	26112032	AL	1	
62	Left Fixing Plate	1332405	AH	1	
63	Left Side Foam	12312405	AD	1	
64	Bearing Fixing Plate	1332407	AE	1	
65	Rear Side Plate of Air Outlet	1302405	AK	1	
66	Connecting Lever	10582008	AC	3	
67	Connecting Lever	10582009	AC	2	
68	Swing Louver	10512028	AC	22	

PART 2

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3) Model: ASFU-36A; ASFU-42A; ASFU-48A;

Exploded Views



No	Description	Part Code	Note	Qty	Price Code
MODEL: ASFU-36A, ASFU-42A, ASFU-48A					
1	Left Decoration Plate	261124151	36	1	AE
		261124152	42, 48		AE
2	Shaft of Louver I	10512025		3	AB
3	Swing Louver Fixer	0133241801	36	1	AG
		0133241802	42, 48		AG
4	Louver Support	24212019		4	AC
5	Louver Fixer	24212018		3	AC
6	Shaft of Louver II	10512026		2	AB
7	Louver	105124081	36	1	AH
		105124082	42, 48		AH
8	Right Decoration Plate	261124161	36	1	AE
		261124162	42, 48		AE
9	Left Swing Motor Fixer	26152005		1	AD
10	Front Panel	15324091		1	AU
11	Display Box	20102138		1	AD
12	Display Board 5T52	30545654		1	AW
13	Buttons Panel	01544106	36	1	AE
		20162003	42, 48		AE
14	Right Swing Motor Fixer	26152006		1	AD
15	Step Motor MP35CA	15212402		1	AF
16	Motor Clamp	26112026		4	AC
17	Water Tray	1272410		1	AZ
18	Auxiliary Water Tray	1272409		1	AN
19	Pipe Clip	70812001		1	AB
20	Drainage Pipe	5235433		1	AE
21	Handle	26232001		4	AD
22	Foam of Right Side Plate	12312402		1	AD
23	Right Fixing Palte	1332404		1	AH
24	Support of Motor Bearing	1792408		2	AC
25	Fixer of Motor Support	1792407		1	AF
26	Right Decoration Panel	26112027		1	AL
27	Pipe Clamp	1072425		1	AC
28	Electric Box	01402407	36	1	AG
		0140240701	42, 48		AG
29	Wire Base	24253001		1	AC
30	Wire Clamp	24253002		1	AC
31	Terminal Board	42011159		1	AD
32	Fuse 5A 250VAC			0	AA
33	Main PCB Z7A251B	30227021		1	BA
34	Ring of Bearing	76512404		2	AC
35	Fan Bearing	76512210		2	AC
36	Transformer 57×25C	43110237		1	AM

PART 1

No	Description	Part Code	Note	Qty	Price Code
MODEL: ASFU-36A, ASFU-42A, ASFU-48A					
37	Cover of Electric Box	1412408		1	AF
38	Centrifugal Fan	10319051		4	AU
39	Rotary Axis	73012402		2	AR
40	Capacitor CBB611A 6uF/500V	33010037		1	AG
41	Capacitor Fixer			0	AC
42	Motor FN150A	15012405		1	BE
43	Motor Fixer	1722410		1	AD
44	Motor Clamp	01702409	36, 42	2	AD
		01702405	48		AD
45	Axes Connector	73012403		2	AL
46	Motor Fixing Plate	1332425		1	AK
47	Front Snail Shell	22202030		4	AL
48	Rear Snail Shell	22202029		4	AL
49	Rear Side Plate	1302431		1	AZ
50	Motor Support	1702411		1	AT
51	Filter	11122013		1	AD
52	Water Lead Plate	1362407		1	AD
53	Front Grill	22412010		4	AL
54	Front Grill Clip 2	26252003		2	AB
55	Remote Controller Y512	305125063		0	AT
56	Evaporator Assy	01029610	36	1	BR
		01029612	42		BS
		01029613	48		BU
57	Front Grill Clip 1	26252002		2	AB
58	Temp Sensor	39000194		1	AD
59	Temp Sensor Insert	42020063		1	AD
60	Cover of Evaporator	1072409		1	AC
61	Left Decoration Panel	26112028		1	AL
62	Left Fixing Plate	1332405		1	AH
63	Left Side Foam	12312401		1	AD
64	Bearing Fixing Plate	1332406		1	AE
65	Rear Side Plate of Air Outlet	1302416		1	AK
66	Connecting Lever	10582008		2	AC
67	Connecting Lever	10582009		4	AC
68	Swing Louver	10512027		26	AC

PART 2

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